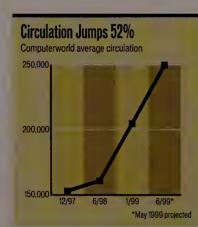
# THE POWER BEHIND THE

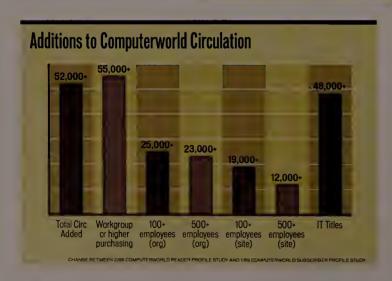
Circulation reaches 205,000 with industryleading \$100,000 spending qualifier



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**COMPUTERWORLD**The Newspaper for IT Leaders

# PORTAL MANIA

They're everywhere. Which one's right for you? Page 74

# **POACHERS BEWARE**

Companies are working on retention strategies and building up their walls to keep raiders out and employees in. Page 54



# Avoiding server overload is easier wi

Avoiding server overload is easier with load-balancing technology. Page 76

# COMPUTERWORLD

THE NEWSPAPER FOR IT LEADERS . WWW.COMPUTERWORLD.COM

MARCH 15, 1999 • VOL. 33 • NO. II • \$4 COPY



THE BOEING CO.'S GRAEBER JORDAN handles wayward sites quietly: "We try not to condemn the 99.9% for the weirdness of one or two"

# INTRANET OVERLOAD

ntranets are sprouting like weeds in large corporations. Boeing has at least 2,300, US West has 600, and your company may have more than you know, hidden in various nooks and crannies, reports *Computerworld* senior editor Carol Sliwa. Now the challenge is to figure out how to manage this semichaotic situation — such as making sure the network and content are reliable and secure — without killing off the gungho spirit of the mavericks who created these baby "intranettes." If the central IT department becomes overly controlling, end users will revolt.

See report, page 20

# WHITHER WINTEL: STRONG AS EVER?

Users say Intel settlement, Microsoft trial won't affect desktop dominance; competition might

#### BY MATT HAMBLEN

Despite government antitrust actions and some new competition, the Wintel duopoly will continue to dominate the desktop for a long, long time, users and analysts said last week.

"If the power's real and [the] perception of it is real and if

the customers don't have a strong belief that Microsoft's practices will be modified, [the government] may not have accomplished much at all," said Tyler Baker, an attorney in the antitrust division of the U.S. Department of Justice in the early 1980s and now a part-

ner at Carrington, Coleman, Sloman & Blumenthal LLP in Dallas.

In fact, observers said competition from innovations such as the Linux operating system and cheaper chips will be more important in checking the future growth of desktop partners Microsoft Corp. and Intel Corp. than any current government investigations.

Wintel, page 101



"I don't think Intel has a monopoly. AMD is giving them a run for their money."

— James H. Goodnight, SAS Institute Inc.



"Intel was incredibly smart to settle. Look at what the trial has done to Microsoft's reputation."

— Esther Dyson, EDventure <u>Holding</u>s Inc.



For IT managers, the government's efforts could "mean more diversity, better choices and probably better commercial conditions in the long term."

— Philippe Kahn, Starfish Software Inc.



"Keeping up with technological advances is more relevant to IT's future than second-guessing the legal issues."

— Heidi Roizen, consultant, formerly at Apple Computer Inc.



"I think the settlement focuses Intel on the business at hand and will prevent it from being distracted."

— John McKinley, Merrill Lynch & Co.

# SAP SERVICE CULLS ERP PAYOFF DATA

Information could help justify users' spending

#### BY CRAIG STEDMAN

SAP AG is quietly putting together a set of services aimed at making it easier for R/3 buyers to measure the return on their investments — a capability several SAP users said they're desperate to have.

Sources said SAP is developing a consulting and sales program, called ValueSAP, that will utilize a database of return-on-investment and business-performance data culled from R/3 users by a consul-

ting firm and a university that are both in Switzerland.

Prospective buyers of SAP's SAP, page 16

# CABLETRON INKS DIRECTORY DEAL

Novell, Netscape pacts will simplify networking

#### BY BOB WALLACE

Cabletron Systems Inc. is finalizing negotiations to license directories from Novell Inc. and Netscape Communica-

tions Corp. in an effort to help users cut costs and simplify administration of complex networks, *Computerworld* has learned.

The Rochester, N.H., networking vendor is expected to demonstrate integration of Novell Directory Services and its equipment at Novell's annual Brainshare conference next week, according to industry sources.

Users stand to gain from the marriage of directories and networks, which would automate the long and arduous manual process of separately configuring, reconfiguring and maintaining sprawling networks comprised of myriad Cabletron, page 16



Your company is growing. And to keep your network one step ahead,

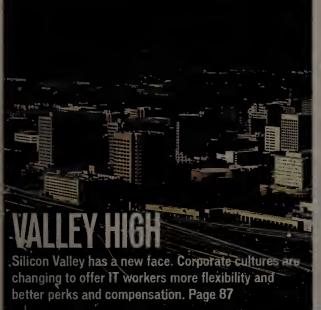


the backplane must grow as well. Intel developed Scalable Stacking Technology which allows you to increase backplane capacity as network traffic increases. So adding an Intel® Express Switch to a stack increases the backplane by 2.1Gbps. Two switches equal 4.2Gbps, three switches equal 6.3Gbps, and so on. You can even manage them all as a

single device. It's yet another way Intel is helping you harness the power of your growing network. To find an Intel® Authorized Solutions Provider, and for more details, visit us on the Web.

► intel.com/network/grow/







# BIRTH OF A LEGACY

With the year 2000 fast approaching, many might like to see Cobol laid to rest. But in 1959, Cobol's creators were doing all they could to make sure it saw the light of day. Page 82

# COMPUTERWORLD

MARCH 15, 1999

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FROM OUR
TECHNICAL
PEOPLE.
I MEAN ZIP.
THEY DIDN'T
EVEN ANSWER
OUR TELEPHONE CALLS.

MIKE CAREY,
SENIOR VICE PRESIDENT
FOR NEW MEDIA AT
THE WEATHER CHANNEL,
ON IT DEPARTMENTS
THAT RESIST COMMERCIAL
WEB PROJECTS.
SEE PAGE 48

# **Nortel Alliance Targets Voice, Data Mix**

A Nortel Networks-led alliance that includes Hewlett-Packard Co., Microsoft Corp. and Intel Corp. will convene this week as Nortel unveils voice and data convergence products using each of their team members' components. Nortel confirmed it will unveil a new brand of products that will support voice and data but stressed it won't replace private-branch exchanges.

# **Laptops With Intel Chips Get Privacy Fix**

Intel said it will release a fix to disable a prototype version of the controversial processor serial number it incorporated into certain Pentium II and Celeron chips for notebooks. The chip, designed by Intel to secure users' electronic-commerce purchases, sparked a controversy among consumer-privacy advocates. It was thought to exist only on the new Pentium III processor.

# **Gates: NT Servers to Conquer High End**

Microsoft CEO Bill Gates vowed in a speech in Japan that Windows NT will "conquer" the high-end server market and eliminate any skepticism about its scalability within the next year. But he also said making PCs easier to use "is an area that is ripe for innovation." After spending a day reviewing error messages that Windows displays to users, Gates said, "even I couldn't understand a great number of them."

## **Short Takes**

Several California retailers are named as defendants in a Contra Costa County lawsuit alleging they violated California's Unfair Business Practices Act for failing to tell customers whether PCs sold in their stores can handle the date change to Jan. 1, 2000. . . . Republican presidential candidate Elizabeth Dole will accept campaign contributions on her Web site (www. edole2000.org) using technology from a German electroniccommerce software vendor.

# IT LABOR ISSUES ADD TO RETAILERS' WOES

Chains hard hit by losses, small budgets, find it tough to stay on the cutting edge

BY BARB COLE-GOMOLSKI

RECENT SPATE of closures store and mergers in the retail indus-(see try point to a consolidation in some sectors, made worse by IT staff shortages and the need to update technology.

J. C. Penney Co. closed 75 stores in January and last week announced a new merchandising strategy to improve its weak sales. Last month, Service Merchandise Co. said it would close more than 130 retail stores. In December, Ames Department Stores Inc. took over Hills Stores Co. And at about the same time, Caldor Corp. announced plans to close its doors for good.

Though the consolidation has cost information technology jobs, several retailers said they're still hurting for people. Industry watchers are predicting more outsourcing and more mergers driven by a need to shore up IT weaknesses, which many retailers can't afford to fix on their own.

#### **Skills Lacking**

"IT used to mean 'let's do point-of-sale on the computer," said Kenneth Palmer, MIS director at Cramers Cashway Inc., an East Stroudsburg, Pa., home center chain. "Now it means manage your inventory better, identify your best customers and sell on the Web."

The problem is that retail IT departments often lack personnel with the skills necessary to handle those tasks, observers said.

Retail sales overall have been strong this year. Sales rose more than 6% in February, according to a Prudential Securities Inc. index of 72 retailers. Discount giants - like Wal-Mart Stores Inc. and Kmart Corp. — did the best, while department stores saw

because they have complicated supply chains that include lots of foreign suppliers.

On top of all that, many have the added work of developing a competitive Web site on which to sell their wares. A recent study of 300 retail executives done by El Segundo, Calif.-based Computer Sciences Corp. showed that 80% of department stores plan to implement online shopping in the next two years.

The money to do all that can be hard to come by. Only 0.7% of retailer revenue is spent on worked well, but the company turned to an outsourcer for its electronic-commerce applications because "we never did find anybody who knew what they were doing," said CIO Charles Marsh.

#### Woes Stack Up

Staffing issues haven't been limited to programming talent. Kmart hasn't had a CIO for several months. Amazon.com Inc. is in a legal battle with Wal-Mart after hiring about 10 former Wal-Mart employees who are data warehouse and merchandising experts.

Don Gilbert, senior vice president of IT at the National Retail Federation in Washington, predicted that more retail firms will turn to outsourcing or look for suitable partners to fill their IT weaknesses.

Jimenez said about 25% of retailers now outsource their data center operations, a figure he said could increase by 20% in the next year. In a recent Gartner survey, IT managers at retail firms said they were more likely to outsource help desk, client/server application development, desktop administration and networking functions in the next year.

# **Recent Retail Deals and Closures**

COMPANY	WHAT HAPPENED
Caldor	Bankrupt since 1995, currently liquidating its inventory
Service Merchandise	Announced plans last month to close more than 130 stores
J. C. Penney	Began the year by closing 75 stores and laying off nearly 5,000 workers
Montgomery Ward & Co.	Signed a five-year IT outsourcing contract earlier this month

flat sales or moderate gains.

Still, retailers are in a bigger bind than most industries, said Ed Jimenez, an analyst at Gartner Group Inc. in Mountain View, Calif. They're plagued by the general shortage of IT workers and high turnover that many companies face but have the added burden of lagging behind in their adoption of new technology. As a result, many are still saddled with aging, proprietary systems that aren't attractive to IT workers who have cutting-edge skills.

And their year 2000 projects are more daunting than most IT, according to a recent report by Aberdeen Group Inc. in Boston. Manufacturers, by comparison, spend 2.4% of their revenue on IT. Also, often cash-strapped retailers are further handicapped by a lower

pay scale.

'We're competing with banks and high-tech companies whose salaries are generally a lot higher," said Brian Kilcourse, CIO at Longs Drug Stores Corp. in Walnut Creek, Calif. To cope, Longs has raised its IT salaries, is leaning more on outsourcers and is "trying to lower the costs of supporting our IT systems" possibly by installing systems that feature automated recovery, he said.

Before it was acquired last er point-of-sale systems. That

#### MOREONLINE

For resources related to the retail industry and information technology, visit our Web site.

www.computerworld.com/more

#### **Corrections**

A March 8 news article, "Ariba Reduces Hassle in Online Purchasing" [page 8], misspelled Intelisys Electronic Commerce

A Feb. 8 QuickStudy feature on CD-R and CD-W [page 77] contained several errors. CD-RW (CD-rewritable) discs must be formatted, but CD-R (CDrecordable) discs don't have to be. In addition, the use of neither CD-R nor CD-RW discs will protect a hard drive from being corrupted by files downloaded from the Internet.

# **Microsoft Mum on Reorganization Plans**

BY DAVID ORENSTEIN

Microsoft Corp. would neither confirm nor deny published reports that it might unveil the results of its internal reorganization plans as soon as this week.

Plans to orient its major lines of business toward customer segments have been under discussion for more than a month. [CW. Feb. 15]

Microsoft needs to give each unit substantial autonomy to combat complaints that it is increasingly unresponsive and bureaucratic, said Jim Balderston, an analyst at Zona Research Inc. in Redwood City, Calif.

October, Camelot Music Inc., a North Canton, Ohio, chain of about 500 music stores, was struggling to find IT staffers. The company decided to put some of its Unix experts though a six-week course on Java programming to migrate from old-



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# MICROSOFT E-COMMERCE USERS KEEP OPTIONS OPEN

**BILL SELTZER says** 

Office Depot hopes

to remove some of

the Microsoft layer

from its e-com-

merce system

Current users happy, but Redmond must prove its servers can run e-commerce sites

BY CAROL SLIWA

ICROSOFT has launched campaign to convince businesses that its server software can run major electronic-commerce And many of its large customers said they have been pleased with the results.

Still, beyond that Microsoft commerce frontage, many use a mixed environment - and aren't necessarily committed to the Microsoft path for life.

"We're not married to Microsoft," said Judy Neuman, vice president of interactive media at Eddie Bauer Inc., a clothier in Redmond, Wash. "So far, this has worked beautifully and supported us. But when our [online] business

grows [to] 10 times what it is today, I don't think we'd be very successful if we were us-

ing the same [Microsoft] infrastruc-Microsoft ture. knows that, and that's why they're busy evolving their products."

Unix systems are favored by many companies because they scale well for high-volume, hightransaction commerce, analysts said.

Microsoft Corp.'s top customers said the com-

pany's products afford them | flexible, economical ways to scale a site. Adding a Windows

adding a Unix server, and the trade-off - more servers to manage - hasn't been a problem so far, users said.

Companies further expect Windows 2000 will help ease scalability concerns.

"I believe barnesandnoble.

com has never had any downtime as a result of the horizontal scalability of Microsoft," said Gary King, CIO at Barnes & Noble Inc. The York-based bookseller relies on Microsoft products for the bulk of its Web architecture, although it does use some Unix-based, middle-tier systems for sourcing orders and getting them

ready for shipment.

Office Depot Inc. in Delray Beach, Fla., also has a mixed NT server can be cheaper than | environment. Microsoft's software serves as the Web front end and takes the orders, then IBM AS/400 systems pass information back to the company's IBM mainframe.

Office Depot this year plans to eliminate that AS/400 layer, CIO Bill Seltzer said. He said he hopes to eliminate some of the Microsoft middle portion at some point as well, connecting users' browsers directly to the mainframe. "It's a cleaner architecture," he said.

David Fry, president of Fry | www.computerworld.com/more

Multimedia Inc. in Ann Arbor, Mich., said Microsoft's Commerce Server (formerly Site Server) can help users who need flexibility on the front end. Fry said he considers using Unix-based architectures when the tasks a site needs to perform are simple and scalability is the prime issue. "For me, it's the tools that are the issue, not the operating system," said Fry, whose company set up such high-profile Web sites as those of 1-800-Flowers Inc., Eddie Bauer, Godiva Chocolatier Inc. and Staples Inc.

#### MOREONLINE

For electronic-commerce resources, visit our Web site.

# **New NetWare to Boost** Speed, Server Management

JUST THE FACTS

**NetWare** 

**Features** 

Code name: Six Pack

Going beta: Next month

Pricing/ship date: Not

New features: A super-

charged, multiprocessing

kernel; desktop management

capabilities integrated into

the operating system

BY SHARON GAUDIN

With Novell Inc. talking about "supercharged" processing and better server management in its upcoming version of Net-Ware, industry watchers said the company is sticking an eager foot through a door that Microsoft Corp. is leaving wide open.

that it plans to ship a beta release in April of the next version of its NetWare network operating system. Code-named Six Pack, the release is being designed to make it easier for information technology administrators to manage while servers speeding the applications that run on them, a Novell spokesman said.

The new version will sport an updated kernel, the spokesman said. NetWare 5.0 was the first release that had a multiprocessing kernel, and he said the company has "supercharged" it in the upcoming version. But he declined to give any numbers on how much that can speed up processing.

new version will have server management tools built right in to the operating system, which should let IT administrators handle, for example, IP address management, printer management and integration of backup software.

"Having management right in the OS means one less thing to learn and integrate," said Rodolphe Jabbour, global inte-Novell last week announced | gration manager at General

Motors Acceptance Corp., a carfinancing firm in Detroit. "Speed and functionality are more effective if it's part of the

Gary Porter, senior systems manager at the University of Kentucky in Lexington, said he plans to move to the new version. "Any time we can speed

things up ... that's going to help," he said.

The new NetWare, which doesn't yet have a version number, will be demonstrated at BrainShare '99, Novell's user conference in Salt Lake City this month. Specifics should be announced there.

#### MOREONLINE

For NetWare resources, books, user groups and more, visit our Web site.

# Early Users Give Kudos to NDS 8.0 Beta

Directory's ease of use, scalability liked

BY SHARON GAUDIN

Early beta testers are using the new version of Novell Inc.'s directory services to extend

their management reach across the enterprise, cut costs and save IT staff for more critical tasks.

Novell Directory Services (NDS) 8.0 started beta testing last week, and early testers so far give it high ratings.

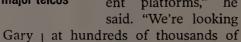
"Novell reached into the magic box for this one and pulled out the sil-

ver-bullet code," said Gary I Porter, senior systems manager at the University of Kentucky in Lexington. "I'm piling stuff onto the directory, and I haven't been able to break it."

No official release date has

been given for NDS 8.0, key changes to which include management of more than network directories and a significant increase in its object-handling capacity [CW, March 8].

> rectory, NDS 8.0, which he is beta-testing. "I need a single point of administration ... one day for routers, application management, different platforms," he

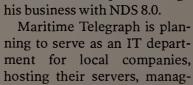


users — that's a lot to manage." Monty Sharma, chief technology officer at Maritime Telegraph and Telephone Ltd., a \$650 million telecommunications firm in Halifax, Nova

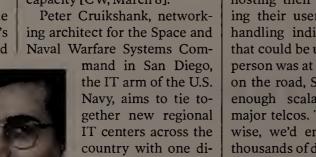
Scotia, said he hopes to change

ing their users and files and handling individual user IDs that could be used whether the person was at work, at home or on the road, Sharma said. "It's enough scalability even for major telcos. To do this otherwise, we'd end up managing thousands of directory trees."

"Novell is really getting this so much of the market."



right," said Laura DiDio, an analyst at Boston-based Giga information Group Inc. She added that installation is easy, scalability is better than the current version and security is tight. DiDio said NDS, which manages NetWare, Unix and NT, is "miles ahead" of Microsoft Corp.'s Windows-only Active Directory, slated to ship with Windows 2000. But, she said, Novell "still has an uphill battle because Microsoft has



The spokesman also said the

MARITIME 's Monty Sharma: NDS 8 has enough scalability for major telcos

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## **Y2K System Crash** Hits Nuclear Plant

Philadelphia-based Peco Energy Co. confirmed last week that a replacement-monitoring system at its Peach Bottom nuclear power plant crashed on Feb. 8 during year 2000 testing. The plant, located near York, Pa., continued to operate at full power through the crash, a spokesman said. The crash occurred because of improper test setup procedures, he said. Plant engineers had neglected to set ahead to Jan. 1, 2000, an external clock that was linked to the monitoring system.

#### Web Aids Lands' End

Lands' End Inc. said its Internet sales rose threefold, to \$62 million, for fiscal 1999. Web-based sales were 4.4% of Lands' End's overall sales, which hit \$1.37 billion.

## **Oracle Profit Jumps**

Oracle Corp. last week reported a \$293 million profit for its fiscal third quarter ended Feb. 28, up 36% from the \$215 million total a year earlier. Revenue for the quarter increased 19% to \$2.1 billion, but sales of Oracle's databases and business applications were up just 7%, to \$825.7 million.

**BELLCORE**, the telecommunications

#### **Short Takes**

research arm of BELL COMMUNI-CATIONS, has changed its name to TELCORDIA TECHNOLOGIES INC. ... BELLSOUTH WIRELESS DATA and VERIFONE INC. have announced they are forming an alliance to build wireless point-of-sale systems. Products will be introduced this year.... PEOPLESOFT INC. said it will bundle data extraction and transformation tools made by **INFORMATICA INC.** with its People-Soft Warehouse data warehousing software this fall.... Systems management software vendor BMC SOFTWARE INC. has acquired NEW DIMENSION SOFTWARE INC., an Israeli enterprise management and job scheduling software maker, for about \$650 million. . . . Web portal CYCOS INC. has paid \$52 million for WEEVO MC., an Internet health site, to become its exclusive provider of health information.

# **New Generation of Scanning Tools Mask Source of Attack**

Espionage has 'never been so easy'

BY ANN HARRISON

For several weeks, television networks have aired dramatic stories of international attacks on Pentagon computers.

But security analysts said last week that those attacks are more likely the work of a new generation of automated scanning and attack tools that simulate coordinated, multinational probes.

John Hamre, deputy secretary of defense, told congressional subcommittees last month that unidentified crackers have been launching attacks from as many as 15 locations worldwide. The U.S. Department of Defense insisted the attacks haven't breached classified networks but declined to confirm details.

However, a bulletin released last week by the CIO Institute (www.cio.org), a private organization of federal government CIOs, suggested a different scenario. It said that, just before Christmas, experts began noticing widespread use of sophisticated scanning tools that mask their activities in a barrage of what appear to be multinational attacks.

#### **Malignant Tools**

"Military and commercial espionage has never been so easy," the bulletin said. It added that the new tools are more malignant than their predecessors because they can spread out attacks to hide below the monitoring thresholds of audit trails and intrusiondetection software.

"We should be worried about automated attacks. The tools have never been this good," said Alan Paller, director of research at SANS Institute, a Bethesda, Md.-based research and educational organization for systems administrators, security and networking professionals.

By embedding those tools in Perl script, crackers can automate the entire process of identifying computer systems, locating known vulnerabilities and exploiting those holes to gain root access. For example, software called NMap per-

forms decoy scans using any | selection of TCP/IP addresses. NMap allows a relatively unso- work, to mimic a coordinated

phisticated cracker, located in | the same city as the target net-

## **Best Offense Is a Good Defense**

To defend against the new generation of scanning tools, companies should establish automated monitoring and auditing procedures along with rapid system administration response, experts said. Smart organizations are running automated vulnerability scans three times per year.

A bulletin from the CIO Institute said companies should encourage competition among their vulnerability testing teams. They should include an inside team, an outside

team from a systems integrator or accounting firm and another from a smaller specialized organization. Once holes are located, companies must allocate trained staff to make sure the holes are closed before they are exploited.

The key challenge, said Alan Paller, research director at the SANS Institute, is recruiting technically capable people and training them to make sure they don't fall behind attackers.

- Ann Harrison

group of international cyberattackers.

Paller said the Pentagon attack didn't have the correct signature for NMap, but he noted there are several other tools with similar capabilities.

But Rob Clyde, security expert at Axent Technologies Inc. in Rockville, Md., said he believes NMap does fit the profile of the Pentagon attacks.

"NMap is not new. It's just this version has come out with the capability of setting things up as a decoy of where the scan is coming from," Clyde said.

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# WIN 98 GLITCH HEAT UP PUSH FOR PRIVAC

#### Bill would inform consumers of threat

BY SHARON GAUDIN

HE HAILSTORM raining down on Microsoft Corp. and Intel Corp. is raising muchneeded awareness about the privacy pitfalls that await most corporate customers, industry observers said.

It's also pushing one legislator to renew efforts to pass a bill designed to ensure that consumers are aware of what information is being collected on them and how it would be used.

The bill would also give consumers the right to deny the use of such data.

advo-Privacy

cates from the Washington- | based Center for Democracy and Technology will meet with the Federal Trade Commission (FTC) this week to press for an investigation into the controversial serial number embedded into the Pentium III processor. A handful of privacy

groups, including the center, have also filed with the FTC a complaint against Intel.

Fueling the fire was last week's announcement by Microsoft, promising to release a patch to fix a glitch in its Windows 98 desktop operating system that automatically - and without the user's knowledge - sends a hardware identifica-

> tion code back to a Microsoft information bank.

#### The Big Picture

While privacy advocates hoisted a warning flag, corporate users and one analyst pointed to a larger privacy issue.

"That Microsoft glitch is scary, but privacy as a whole is scarier these

days," said Denis Darveau, senior network consultant at Kaiser Foundation Health Plan in Walnut Creek, Calif. "That bug means Microsoft knows more about me than I wanted them to. . . . But the bigger problem is that I have to worry about that, and I have to worry

about cookies and sniffers and ignorant users who download things they shouldn't and give out too much information."

Intel has offered a way to disable the serial number, but it was quickly compromised by a German hacker [CW, March 1]. As for Microsoft, it says it's moving quickly to mend its mistake.

Rob Bennett, Microsoft's group product manager for Windows, explained that the problem lies in the Registration Wizard that pops up to help users through the Windows 98 setup process.

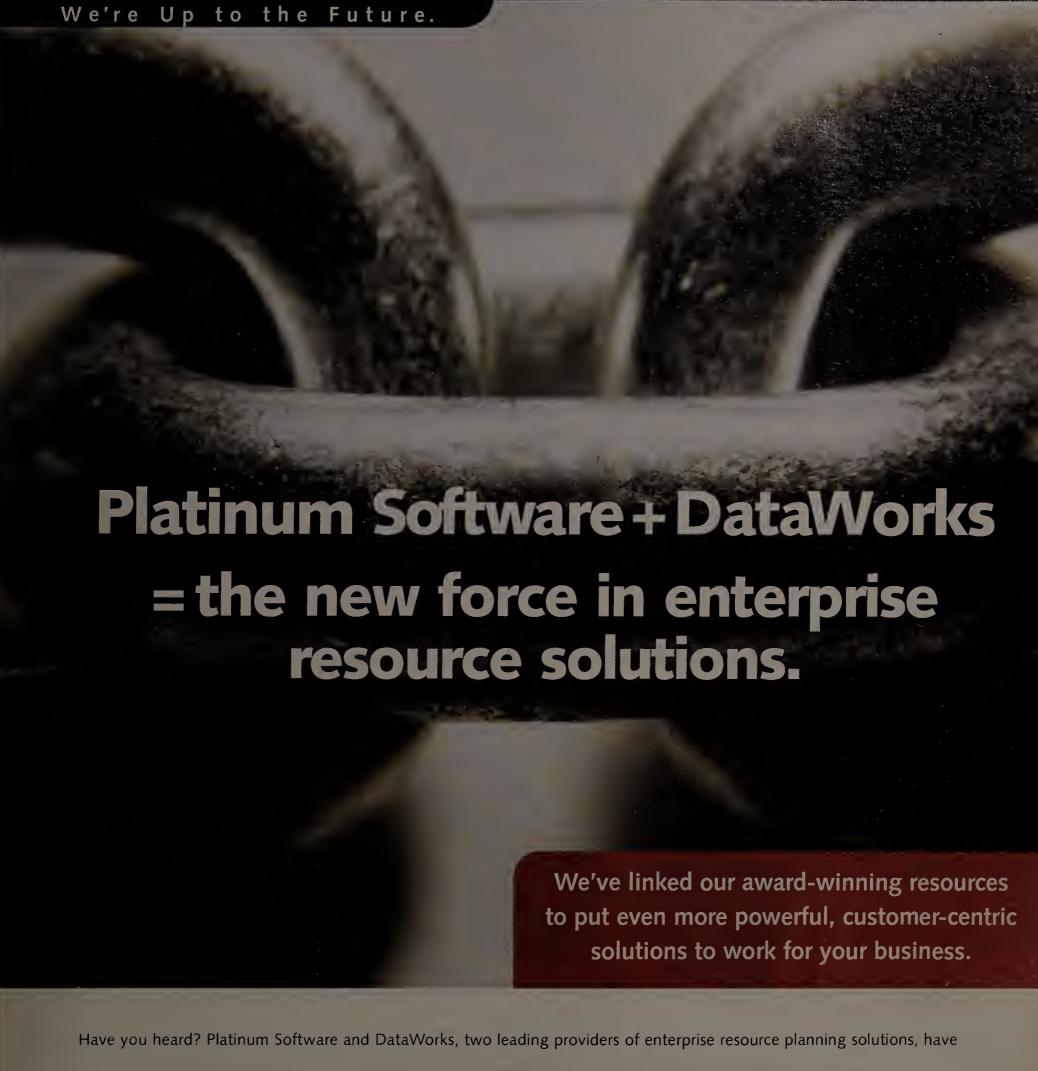
The wizard asks users if they want to register with Microsoft online, automatically sending in configuration information that will be stored in the Call Center database and be used for support calls.

The problem, Bennett said, is that whether or not a user wants to register, the wizard sends a hardware identification code back to the company.

Bennett added that a fix for the problem will be sent out in the Windows 98 Service Pack, which is now in beta testing. Microsoft will send out a software tool in the next few weeks to remove any identification or configuration information from users' systems.



MICROSOFT'S ROB **BENNETT: Service** Pack will include fix



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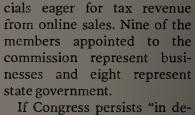
# Officials File Net Taxation Lawsuit; Warn of Business 'Greed'

The Internet Tax Freedom Act may have provided a short- | electronic commerce.

line businesses, but it hasn't ended the battle over taxing

federal court by state and county officials more than underscored that point. The law-

sional commission on Internet taxation is tilted toward businesses and against local offi-



manding this illegal composition, [this commission] is not about a new, growing industry ... it's about greed," said Paul Johnson, commissioner of Minnesota's Hennepin County, which incudes Minneapolis.

Congressional leaders said they want to resolve the imbalance. But Johnson's words reflect the tension over a shift in sales from Main Street to the Internet. Online sales, which were estimated at \$8 billion last year, should reach \$108 billion by 2003, or about 6% of all retail sales, according to Forrester Research Inc. in Cambridge, Mass.

#### **Tension Mounting**

Political pressure for online sales taxes is certain to grow, and experts said businesses shouldn't wait for Congress which approved the 3-year moratorium in October -- to resolve the issue. Some companies have already taken action.

Hoover's Inc., an Austin, Texas-based provider of online financial information, moved a server to Maryland last year in part because of concerns about state tax policies.

Texas was considering treating servers as physical stores and forcing online merchants to collect sales taxes from outof-state customers who downloaded information from them.

By moving the server, the tax exposure ended, said Patrick Spain, Hoover's CEO. Texas is one of eight states exempted from the Internet Tax Freedom Act because its laws predate

Putting servers in "cybertaxfriendly" states is something other businesses may want to consider, said Richard Prem at Deloitte & Touche LLP in San Francisco, co-author of the book Taxation of Cyberspace.

Companies can also protect themselves by designing electronic-commerce systems that build in the necessary tax information and collection fields, even if they aren't currently activated, Prem said.

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# TRAVEL AGENTS TO SEEK U.S. PROBE OF AIRLIN

Three groups claim airlines' direct ticketing via Internet unfair

BY STEWART DECK

HREE TRAVEL services groups, under pressure from the growth in direct ticket sales via the Internet, are on the verge of asking the U.S. Department of Justice to look into possible anticompetitive behavior by U.S. airlines.

"Yes, this filing is imminent," said James Ashurst, a spokesman for the American Society of Travel Agents (ASTA) in Alexandria, Va. — one of the three groups. "It is important that as the Internet continues to grow, the airlines are not allowed to make this medium their own proprietary system,"

he added. "They're trying to create a system that makes it nearly impossible for an agent to make money booking tickets via the Web."

The filing will name the Airlines Reporting Corp., a clearinghouse controlled by the airlines, instead of individual airlines. Joined with ASTA are the Interactive Travel Services As-

sociation and the Coalition for Travel Industry Parity.

Allan Muten, an Airlines Reporting spokesman in Fairfax, Va., said the group wouldn't comment until there was a filing. The travel agents' troubles stem from the ability of the airlines - under guidelines established with the passing of the Airline Deregulation Act in

> 1978 — to set retail ticket prices while also determining maximum agent commissions. Online agents, includ-Microsoft ing Corp.'s Expedia Web site, are also not allowed to book same-day tickets.

> A recent study by Nicole Vanderbilt, an analyst at

Jupiter Communications Inc. in New York, showed that travel agencies handled more than 75% of the tickets sold in 1996 but only 52% in 1997. In 1997, airlines and other direct suppliers garnered 48% of online sales.

Reid Detchon, executive director at Interactive Travel Services in

claimed that what the airlines are doing "is discriminating against e-commerce" from other players and driving traffic to their own sites.

Detchon said he couldn't predict the outcome of a complaint, but the Justice Department could order the airlines to stop their practices.

At an industry conference last week, a British Airways PLC executive said travel agencies will need to, and likely will, adapt. David Taylor, marketing distribution manager at British Airways in London, said last week during the Airlines@internet.99 conference in Monte Carlo that he foresees major travel agencies moving to fee-based services instead of commissions for corporate customers purchasing airline tickets and making hotel reservations.

Computerworld senior editor Sharon Machlis contributed to this report.

# Flying by Different Rules

Internet changing the way airlines, agents do business

BY SHARON MACHLIS MONTE CARLO, MONACO

Airlines are discovering that the Internet may do a lot more than simply open another sales channel.

From pricing to customer relations to filling unsold seats, the Web is changing the travel industry, according to speakers at last week's Airlines@internet.99 conference here.

For example, as consumers have more access to ticket price information, they "are gradually challenging the vagaries of our pricing," said Julia Groves, manager of digital Washington, channels at British Airways PLC in London. "The pricing structure cannot stay exactly the way it is."

Now, an airline might charge substantially more for a roundtrip flight from, say, London to

Hong Kong than the same trip starting in Hong Kong. Such market-sensitive discrepancies have helped boost airline profits, Groves noted, so companies need to find alternatives that won't hurt the bottom line.

The Internet will also let airlines bet-

ter cultivate their most valuable customers, typically frequent business travelers, said Yaron Shavit, an analyst at Cap Gemini Group in Paris. "What really drives substantial enduring loyalty is personalization," he said. "Most passengers' interaction with airlines is anonymous."

Airlines could offer detailed, personalized information to their customers on the Internet, he said. They should also make sure passenger information is available to airline em-

ployees at every point, from reservations to in-flight, Shavit said. That way, if a valuable customer registered a complaint about service, the check-in agent and flight attendants would have a record of it the next time that customer

Predicts \$10M in flew with the airline. online travel sales Already, American

**NANCY ZEBRICK:** 

Airlines' redesigned, more personalized Web site has a better "look-to-book" ratio (browsers to purchasers) than the company's call center, said Mark Tilden, chief technical officer at Sight & Sound Software Inc., a Beaverton, Ore., company that helped with the redesign.

Travel agents are finding they need to adjust as the Internet allows consumers to do more research on travel pricing and destinations - tasks once left largely to specialists.

Nancy Zebrick, owner of All Destinations Travel Inc. in Cherry Hill, N.J., decided a year and a half ago to close her storefront shop and move her business online. She's predicting \$10 million in sales this

Zebrick said she expects there will be fewer travel agents in the future but that some can succeed by specializing in niche markets - her agency's specialties are the Caribbean, spas and honeymoons — and by offering personalized services.

# **British Airways Plans for Volume Ticket Sales**

More online revenue sought to cut Web costs

**BRITISH AIRWAYS'** 

Agencies turning to

fee-based services

**DAVID TAYLOR:** 

BY SHARON MACHLIS

British Airways PLC currently sells less than 1% of its tickets over the Internet. But top executives are hoping that fully half of all sales will be booked on the Web by 2003 - and is investing tens of millions of dollars on IT infrastructure, marketing and related expenses.

"We expect travel to be the No. 1 consumer market online in 1999," said Julia Groves, manager of digital channels at the London-based airline.

During the Airlincs@internet.99 conference here last said Antoine deKerviler, man-

week, several major airlines outlined plans to boost their Web presence. All, however, cautioned that selling online is neither easy nor cheap.

"I am not telling you what my cost of sales is, but it's not pretty," Groves said.

But those expenses should decline as volumes rise, she said at the conference, which was sponsored by International Air Transport Association.

Compagnie Nationale Air France, based in Roissy, France, plans to begin selling tickets on the Web before the summer, ager of electronic commerce. However, the "Internet will increase our distribution costs" compared with the airline's existing electronic channel in France, called Minitel, which has about 15 million subscribers in France.

Under the Minitel model,

subscribers pay roughly 21 to 38 cents per minute for connect time, which is split between the French telecommunications ministry and the merchant whose server is being used.

Overall,



Travel will be No. 1 online market in '99

France estimates that costs of selling over the Net will be about 50% lower than nondirect distribution channels such as travel agents. DeKerviler said the Internet will also make new demands on the company, such as dealing with massive amounts

e-mail queries and revamping legacy systems for customer access "that were never de-

signed for access by thousands of clients."

He said Air France expects that its phone agents will sometimes be forced to deal with Web surfers' technical problems. "All of a sudden, you have reservation agents doing technical support for Internet users," he said.

# Are you ready for the new customer?



Plan accordingly.

There are two critical dynamics to understand about today's customer. One, nobody has any time. Two, they expect every company to be on the Web. They want it all online—product information, pricing, support, anything that will save them time and money. Sure, relationships are still built on trust, commitment and support. But for this new breed of empowered customer, this **e-customer**, they're based on the Web.

While **e-customers** present endless opportunity, they do pose some challenges. Managing relationships with customers, prospects and partners online is an enterprise-wide task. Systems performance and scalability needs are key. In short, it's got to be done right. Shrink-wrapped solutions will fall short. Experienced partners with customizable products and old-fashioned follow-through will succeed.

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# **Encryption Repeal Passes First Step**

A bill lifting restrictions on encryption unanimously passed a House subcommittee last week. The bill would let companies sell encryption software using 56-bit or larger keys if the developer can show an equivalent foreign product is available.

### AT&T, Lucent Sued

A New York law firm has launched a class-action lawsuit against AT&T Corp. and Lucent Technologies Inc. claiming that the companies sold equipment they knew would cause problems when the calendar flips to 2000. A Lucent spokeswoman said the charges are groundless.

## Amazon Countersues Wal-Mart Over IT

Amazon.com Inc. countersued Wal-Mart Stores Inc. last week, asking a Washington state court to dismiss Wal-Mart's suit and award damages if the retailer's actions are found to injure Amazon. Wal-Mart sued Amazon last year alleging it was stealing trade secrets by hiring 10 former Wal-Mart IT staffers with knowledge of Wal-Mart's data warehousing and merchandising systems.

# Motorola Sues Intel Over Chip Talent

Motorola Inc. claims in a lawsuit filed in Texas that Intel Corp. gained improper access to trade secrets when it hired Mark McDermott, head of a PowerPC processor design center, and 15 other former Motorola staffers. Intel hired McDermott last fall to head up a center developing a system-on-a-chip design.

## **Short Takes**

NETSCAPE COMMUNICATIONS

CORP. in Mountain View, Calif., last week released Communicator 4.51, an updated version of its Internet mail and Web browsing client. . . . Because of flat revenue, French telecommunications-equipment giant ALCATEL SA will cut 12,000 jobs in the next two years.

# GM ESCALATES ITS Y2K PREPAREDNESS EFFORTS

No. 1 automaker expects to spend \$710 million to \$780 million on tests

BY BOB WALLACE

ENERAL MOTORS
Corp. last week
confirmed it has
been escalating
its year 2000 preparedness efforts as part of a
project the world's largest automaker estimates will cost between \$710 million and \$780
million.

GM, which plans to create an unspecified number of year 2000 command centers in Detroit and various international facilities, has begun testing without major incident at its plants and has started work on contingency planning. But the automaker said it has no plans to freeze or lock down any non-year-2000 information technology projects. GM has hundreds of employees dedicated to its year 2000 efforts.

#### Focus on Testing

"Last year, we focused on remediation, and 1999 will predominantly be for readiness testing, where we run items in their overall environment and make sure everything runs together," said GM spokesman John Ahearne.

Detroit-based Deloitte Consulting LLP partner Joe Bione gave automakers high marks, although he wouldn't say how GM ranks in dealing with year 2000 as compared with its competitors. "The auto industry has led the year 2000 effort, and GM is part of an overall and global program that's at the forefront of Y2K," he said.

GM is taking recommended steps, such as putting together contingency plans and setting up centers to deal with problems, Bione said. That way, "when things happen, you can get the information to one location and figure out how to deal with it," he said.

The automaker kicked off its plant-testing effort in January when it rolled its own and key suppliers' clocks ahead during production at its Lake Orion, Mich., assembly plant. "There were a few five-minute glitches, but then things went normally," Ahearne said. No problems were reported when the same test was run soon after at GM's Arlington, Texas, assembly plant, he added. GM said in a Securities and Exchange Commission filing that it "currently believes that the most reasonable likely worst case scenario is that there will be some localized disruption of systems that will affect individual business processes, facilities or suppliers for a short time rather than systemic or long-term problems affecting its business

operations as a whole."

Although specific contingency plans won't be put in place until midyear, GM may deploy emergency response teams on a regional or local basis and develop plans for the allocation, stockpiling or resourcing of "components and materials that may be critical to our continued production," the automaker said.

# **Nike Hands IT Chores to Lockheed Martin**

BY KATHLEEN MELYMUKA

Nike Inc., the \$9.3 billion Beaverton, Ore., sports shoe giant, has signed a five-year agreement with Lockheed Martin Integrated Business Solutions Co. (IBS) in Bethesda, Md., to outsource its data center, desktop support, network management and technical asset management operations.

About 180 of the company's 1,300 information technology workers are expected to move

to IBS. The rest will continue to develop and support electronic-commerce systems and other strategic business applications that aren't included in the outsourcing deal.

Nike CIO Ken Harris said the agreement will enable the company to concentrate on its core competency in sports products, maintain leadingedge IT services through IBS and focus internally on "the sweet spot" of IT value to Nike: supporting strategic initiatives such as supply-chain management, electronic commerce and knowledge management. He declined to specify the terms of the outsourcing deal.

The move should improve Nike's bottom line, said Faye Landes, an analyst at Thomas Weisel Partners in New York.

The agreement shouldn't impact Nike's year 2000 preparations, Harris said.

# DC Notes: IRS Tests for Y2K, Funds for Net Boost on Tap

WASHINGTON

■ The Internal Revenue Service plans to continue end-to-end testing of its systems through mid-December for year 2000 problems. It's a tight schedule, but Renee Shaw, the assistant commissioner for product assurance at the tax agency, says the IRS has little choice. The programs have to be updated with annual tax law changes, she said.

Shaw said the IRS's testing program is well under way, with 300 employees working on it. During the summer, the IRS will test all the programs that will go into production Jan. 1. That will be followed by a final test of the total infrastructure, she said. The IRS testing work is kept separate from production systems processing tax returns, she said. The U.S. General Accounting Office, in a recent

The U.S. General Accounting Office, in a recent report, said the IRS is behind schedule in its year 2000 work. It said the testing was both "unprecedented" and critical for determining the IRS's year 2000 readiness.

■ Some \$23 million that has been set aside in a fund to improve the performance of the Internet could disappear under a bill heading for a full House vote next month.

The money that went into that fund came from domain name registration fees. But a federal judge last year ruled that the fee, which was collected by Network Solutions Inc. under the aegis of the National Science

Foundation (NSF), was an illegal tax.

Congress last year approved a provision that would allow the NSF to keep the fee. But a bill, called the Home Page Tax Repeal Act, introduced by Rep. Terry Lee (R-Neb.), would refund the money to domain name registrants. Following last year's court ruling, domain name registration fees were reduced from \$100 to \$70.

The U.S. Federal Trade Commission, in concert with several other federal agencies, took legal action last week against 33 illegal pyram d schemes. One settlement required organizers to pay

back \$2 million to some 30,000 participants.

■ Business travelers planning international trips after the new year may want to check with the U.S. State Department. The department is compiling information on the year 2000 readiness of nations worldwide and intends to issue periodic updates.

The agency is also examining the safety of nuclear reactors in the former Soviet Union. U.S. government agencies are "preparing for possible consequences of a Y2K fai ure in a nuclear plant or, more likely, in the electric grid to which it is connected," said Bonnie Cohen, an undersecretary of state, at a March 5 Senate hearing.

- Patrick Thibodeau



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COMPANY H EWORLD'S INTERNET COMMUNICATIONS

Continued from page 1

# **SAP Payoff Data**

enterprise resource planning (ERP) applications could use the pool of ROI data to better gauge the potential benefits of installing R/3 before committing to investing millions of | R/3]," Hafer said. "I'm spend-

dollars in a project, the sources said. And users who already have R/3 are supposed to be able to get more detailed measurements of its ongoing impact on key business metrics such as inventory turns and product cycle times. They then could look at how they're doing compared with similar companies.

adopters The difficulty of getting that kind of data now "is killing | Hydro Agri's business units. me," said Andy Hafer, director of information management at fertilizer maker Hydro Agri North America Inc. in Tampa, Fla. Like many ERP users who needed to fix year 2000 prob- ment applications.

lems or put different business units on a common system, Hydro Agri didn't perform detailed ROI studies before deciding to install R/3 six years

"But I'm getting more pressure now to justify both the past investments and anything we do going forward [with

JUST THE FACTS

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ValueSAP: Consulting and sales

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R/3 release that's due to be pre-

New applications: Tools for sup-

ply-chain planning, electronic com-

Services: Increased investment in

consulting, especially with early

merce and front-office jobs

program that will attempt to quanti-

**Priorities** 

fy ROI for R/3 users

viewed this week

ing a heck of a lot of time focusing on that."

Hafer asked SAP for ROI information two years ago, but he said all it had to offer then "some glossy brochures and very generic data." He's now working with a Tampaarea consultant to develop a way to better assess what R/3 has done for

Bell Canada is another big R/3 user wrestling with the same issue as it prepares to go live next month with SAP's finance and project manage-

"We're constantly being | asked by our management to validate and justify the investment we're making," said Frank Barfuss, a business project manager at the Montrealbased telephone company. But the project team still is working out how to measure R/3's impact, he said.

Getting ROI data and linking it to R/3 use "isn't always a straightforward exercise" if you try to go beyond obvious benefits such as head-count reductions and the elimination of incompatible mainframe applications, Barfuss added.

#### Show Me the Numbers

ERP vendors as a whole haven't had much hard-andfast ROI data to show users, said Jim Holincheck, an analyst at Giga Information Group Inc. in Cambridge, Mass. But that's becoming more important now that year 2000 fixes are vanishing as an easy way to justify an ERP project, Holincheck said.

"There's going to be increased scrutiny put on the business cases for these investments because that burning issue isn't there anymore," Holincheck said.

Out of 62 companies sur-

veyed recently by Benchmarking Partners Inc. in Cambridge, Mass., about 75% did up-front ROI calculations before installing ERP systems. But many users have said getting a complete picture of the actual financial benefit isn't easy.

One big unknown is whether SAP will charge users for any part of the ValueSAP program. SAP declined to comment on its plans, but financial analysts who met last week with officials from the German vendor said ValueSAP was mentioned as a key new initiative.

Cindy Bernstein, vice president of sales and marketing at the U.S. subsidiary of IMG Corp., confirmed that the Swiss consulting firm is working with SAP on ValueSAP. The program is being piloted at two user sites in Europe and Asia, she said.

IMG has developed tools that extract business-performance data from R/3 systems, Bernstein said. The ROI database, maintained by IMG and the University of St. Gallen in Switzerland, currently has input from about 100 business units at 50 companies, primarily in the chemical and pharmaceutical industries.

That kind of information sounds useful "in spades," said Michael Cromar, chief financial officer at GATX Capital Corp., a San Francisco-based asset management firm that uses R/3. "I'm surprised that [vendors] haven't done a better job of this.'

Much of the ROI that companies can get from ERP systems such as R/3 depends on how they manage the software and their business after the installation work is finished, Cromar said.

#### MOREONLINE

For SAP user groups, career information and other resources, visit our Web site. www.computerworld.com/more

Continued from page 1

# Cabletron

"It will take fewer network administrators to accomplish more management activities in a lot less time," said Laura DiDio, an analyst at Giga Infor-

bridge, Mass. "And all this will result in cost reductions for IT departments."

Cabletron's directory strategy has kept one of its large users from leaving the supplier and moving to Cisco Systems Inc.

"It played a very large role in our decision to stay, because we're looking at leveraging directory technology to gain more control over administration

and spend less time with | equipment," said Stuart Franklin, information technology manager at Covington & Burlin, a Washington law firm. He said he believes his project can be done sooner because Cabletron will deliver before Cisco. Franklin oversees a worldwide network with more than 1.000 users and considers it a must that NDS be able to con-

trol networking hardware.

An NDS/Cabletron combination would let the five-person support staff at Atlanta Gas Light Resources provide a higher level of service for its 56-site, 3,000-user data net-

"This would enable us to integrate the support and manmation Group Inc. in Cam- | agement of our entire network

from tions all the way down to networking hardware, which would speed our responsiveness

in fixing and maintaining the network," said Mark Edwards, senior data communications analyst at the Atlanta-based utility holding company. "It would also help us maintain appli-

cation [performance]."

Cabletron also stands to gain. Cisco has cast its lot with Microsoft Corp. by licensing Microsoft's Active Directory, which isn't due until next year, leaving open the window of opportunity for smaller rivals such as Cabletron.

Officials at Novell, Netscape and Cabletron declined com-

# MICROSOFT GIRDS FOR LONG BATT

Plans for antitrust case not affected by Intel settlement; trial to resume in April

BY PATRICK THIBODEAU

NTEL CORP.'S settlement isn't producing a change of heart for Microsoft Corp. Instead, the company appears to be to digging in.

An internal ll-page company memorandum distributed to Microsoft managers and widely leaked to the press last week argued the company's case and indicated Microsoft is resigned to a protracted court battle defending itself against the Department of Justice's lawsuit. The case is "likely to continue" for some time, the memo said.

A Microsoft spokeswoman said last week that the compa-

ny was neither preparing for an appeal nor seeking a settlement. A source from one of the states party to the antitrust suit also denied settlement talks.

But the antitrust trial, which is on a six-week recess and is due to resume in mid-April, still has a long way to go. Daniel Wall, an attorney at Mc-Cuthen, Doyle, Brown and Enersen LLP in San Francisco, said favorable press coverage probably has government attorneys "feeling pretty bullish about themselves," makes this a bad time for Microsoft to settle.

Justice Department officials couldn't be reached for com-

William Kovacic, a visiting professor of antitrust law at George Washington University in Washington, said if Microsoft were to settle, it would be before Judge Thomas Penfield Jackson pronounces his verdict. Once Jackson issues his findings, private parties may be able to use them in litigation against Microsoft. But Kovacic believes a settlement is remote.

A published story hinting at a settlement last week helped push Microsoft's stock up by a few dollars. But William Kurtz, an analyst at H. G. Wellington in New York, said Microsoft's stock may be staying in the \$160 neighborhood because of the chance the company will be broken up. If the company is ordered broken up, it will be worth more to stockholders, he said. "So you can't lose." >

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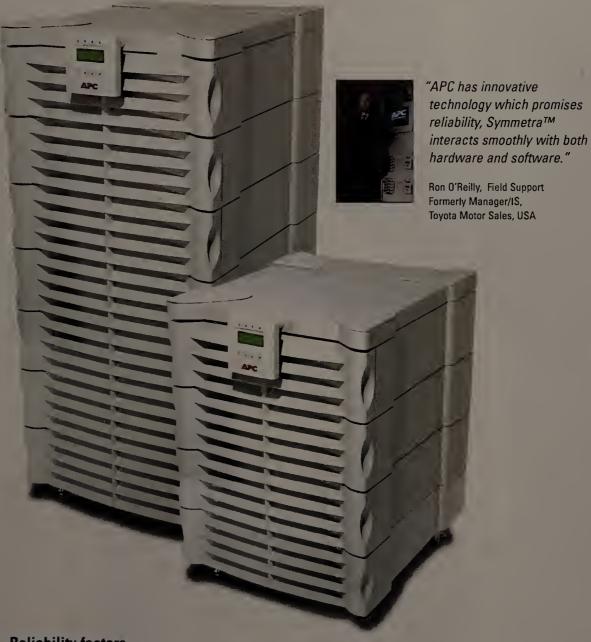
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# MAVERICK INTRANETS A CHALLENGE FOR IT

Goal is to keep 'Wild West' in-house sites updated, maintained and secure

BY CAROL SLIWA

END A SNIFFER out on the network of a large corporation and you may discover dozens, maybe hundreds, even thousands of baby "intranettes" in various nooks and crannies of the organization.

The Boeing Co. in Seattle, for example, discovered more than 1 million pages hosted by at least 2,300 major intranet sites on more than 1,000 Web servers. And there could be even more intranet sites, company officials acknowledged.

Intranets have sprouted like weeds in many corporations, which isn't surprising because they're reasonably cheap and easy to set up. But some of those far-flung intranets grow up unsupported by the information technology department and hidden from management's view.

Gene Phifer, an analyst at Gartner Group Inc. in Plano, Texas, calls this semichaotic

state of affairs the "Wild West intranet." Companies face a balancing act in trying to rein in the intranets while leaving employees enough freedom to meet their business needs.

#### **Light Touch**

Too much control can dampen the entrepreneurial spirit that made the intranets grow and thrive in the first place, IT managers said. "This is a technology that doesn't need to be burdened by a lot of centralized control," said David Laube, CIO at Denver-based US West Inc.

Left unchecked, however, unsupported intranets can give company officials a headache.

Boeing, for instance, was happy that an industrious employee had built a corporate "Boeing Look Up Everything Site," or BLUES. Colleagues had grown to depend on it. But when the employee left Boeing for another job, the company had to find a new owner to

tend the orphaned site.

Stale content can be another problem. A major company reorganization, for instance, wasn't reflected on every intranet page at Charles Schwab & Co., so some employees got incorrect information.

Inappropriate content for a business-oriented intranet — whether a personal page, offensive information or sensitive company data — is another persistent concern among companies with loosely controlled intranets.

"You wind up with some aberrations, and the fear is that the aberrations are going to be the majority, and that scares you to death," said Graeber Jordan, Web program manager at Boeing.

But Jordan has found that the vast majority of employees stick to the Boeing guidelines that govern proprietary information in any format. Not wanting to send a "chill factor" through the employee ranks, Boeing prefers to deal with wayward sites quietly, Jordan said.

"We try not to condemn the 99.9%," he said, "for the weirdness of one or two."

Some intranet issues, however, merit more aggressive attention. Gartner Group predicts that by next year, 30% of companies that don't have policies and guidelines for their intranets will suffer some loss of important data and encounter one or more breaches of internal security.

"There are Web servers sitting under somebody's desk in a lot of cases. You kick the power switch, the Web server goes down, and the information that the department needs is unavailable," Phifer said.

Some companies, including Boeing, are taking the carrot-and-stick approach. Users gain exposure and the benefits of the company's intranet search engine if they choose to register their sites through the Boeing technical library. The company, in turn, can more easily support their sites, verify their authenticity and check for broken links.

At US West, any sites deemed critical to the business must conform to company standards to be included on its Global Village home page. That means using a designated set of servers, conforming to design requirements and carrying the site creator's contact

you to death," said Graeber Jordan, Web program

US WEST CIO DAVID LAUBE audits the company's
600 intranets for network capacity planning

information.

For capacity planning purposes, US West audits its 600 sites to monitor network activity and track growth rates. "It's our obligation in the IT shop that we keep the central tool of the business up and functioning properly," Laube noted.

"It's still like the Wild West," he said, "but the deputy is now in town."

#### **Natural Selection**

But US West has no plans to stitch together its grassroots sites "unless there's a compelling reason to do so," Laube said. He said he prefers to let the evolutionary migration process take place for the sites that carry the most value.

The company's next project is figuring out what corporate data is on the sites, so it can decide if it wants to label sensitive content "US West confidential" or place it inside password-protected sites.

Charles Schwab, which has close to 100 Web servers dishing out intranet content, plans to take an extra step: Get as many sites as possible to use a new, structured content-management system. "More and more will migrate as people see the benefits of this," said Tom Voltz, managing director of the San Francisco brokerage's intranet services.

Schwab also is migrating to a Web farm of servers and related services. Users who choose to host their intranet sites through the Web farm will get a more reliable site because the IT department will worry about load balancing and redundant hardware. IT staffers, meanwhile, will be able to enforce technology standards.

Consultants and analysts agreed that some level of central IT department control is needed to ensure the intranet stays up and running, security

policies are maintained and content is managed. But where a company fits on that chaosto-control spectrum may depend on its needs, stage of intranet development and corporate culture.

"First, people let them grow at will. And then they're trying to overlay an infrastructure that makes them more powerful," said Mid Walsh, vice presi-

dent of consulting at Computer Sciences Corp.'s e-Business group in Natick, Mass.

For companies just getting started with intranets, that could mean adding a front-end search engine requiring page design templates or building a centralized intranet portal that provides structure and navigational aids. Companies that already have portals can add a more sophisticated search tool or content-management system or try to bring more grassroots sites into the fold.

Eric Brown, an analyst at Forrester Research Inc. in Cambridge, Mass., said having a portal "is the new bar that defines what an intranet is."

"It's not sufficient to just have a bunch of [internal] Web sites and browsers," he said. "It's not an intranet until I have some unifying force that pulls all of these things together into something that's usable."

However, several intranet managers said they don't like to link every site to the main portal page, because some departmental sites may be useful only to small groups of people.

And consolidation will inevitably face turf battles. "The single biggest challenge in this kind of project," Walsh said, "is to achieve organizational consensus to bring unity to all of the different intranets."

# **How to Tame a Wild West Intranet**

**Establish an intranet protocol group** with representatives from the primary business units, the corporate IT department and corporate communications staff.

Understand short- and long-term goals of the enterprise intranet.

Identify target applications, such as synchronous and asynchronous collaboration, messaging, document management and workflow.

Identify who will access the intranet, keeping in mind that trading partners and customers eventually may access selected portions of the intranet via an extranet.

Develop policies, procedures, standards and guidelines for creating, publishing and managing content.

identify mission-critical resources on the intranet and treat them appropriately.

Usa systems/network management tools to provide a more stable environment.

Shive for balance. If users perceive that the central IT department is overly restraining them, they will revolt.

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# EXPORTING JOBS SAVES IT MONEY

U.S. firms buy in to innovative approach to labor, visa crunch

BY JULIA KING

NDIA, Ireland, Israel, Barbados, Bulgaria.... More U.S. companies are shipping more software projects to these and other offshore sites in the ongoing scramble to beat information technology skills shortages, visa caps and ever-rising labor costs.

In the past year, U.S. IT projects shipped to India alone ballooned by almost 60%, according to India's National Association of Software Service Companies. That represents nearly 200,000 jobs and will account for a software export market of about \$4 billion by year's end.

And it's not just Cobol coding work. Mission-critical projects ranging from real-time stock trading applications to electronic-commerce systems are moving offshore to thirdparty service providers and new software development facilities established abroad by U.S companies.

One big reason is it's a lot cheaper.

For example, software teams with a ratio of 25 on-site workers to 75 workers offshore in India can expect to pay a blended hourly labor rate of about \$37, compared with an average rate of \$75 to \$100 for an all-U.S. team, according to Chris Kizzier, an offshore outsourcing consultant in Portland, Ore.

Other big factors contributing to the offshore boom include the ever-increasing and reliability of communications technology and better project-management discipline.

#### It's a Small World

"With advancements in communications and the Internet, the world has shrunk down to the size of a pea, and the fact that you might be 9,000 miles away is irrelevant once you put the right project management disciplines in place," Kizzier said.

In the past 15 months, five

U.S. companies, including | Boston-based Liberty Mutual Insurance Co., have opened IT research and development centers in and around Belfast, Ireland. So far, Liberty Mutual has hired 60 Irish software developers — all of whom get at least six months of training at Liberty's offices in the U.S. to work on C++ and Java-based applications, among others.

"There's definitely a [labor] cost savings, plus there are tax incentives [for locating] in Ireland," said Chris Gravel, U.S. operations manager at Liberty's Belfast-based software

Meanwhile, Guy Carpenter & Co., a \$450 million New York reinsurance company, has outsourced development of a Web-based insurance brokerage system to PRT Group Ltd., which operates out of a 55,000square-foot development center in Bridgetown, Barbados (see story below).

"We have half the team ongroups are connected via a Tl

site and half the people in Barbados," said John Gropper, CIO at Guy Carpenter. The two communications link, and Barbados is a four-hour flight from New York.

With this kind of project management and communications in place, "there's very little difference in executing a project on the other side of the world vs. executing it on the other side of the street," Kizzier said.

That can even include the software developers.

Global Advance Inc., an offshore services company in Jerusalem, employs U.S. expatriates exclusively to work on projects outsourced to Global by U.S. companies. Its customers are primarily small and midsize companies, including Waxman Securities Inc., a privately held investment firm in West Hempstead, N.Y., and Leg Inc., a Reading, Pa.-based candy and toy company.

#### **Home Away From Home**

Global's policy of hiring U.S. expatriates means U.S. companies like Baltimore-based Wendell Textiles Inc. have access to skilled, English-speaking IT workers who are knowledgeable about U.S. business practices, but whose labor costs about 30% less than U.S.based developers.

"I like the fact that there are Americans working on the projects because I think this whole thing is about communication," said company president Scott Wendell, who is in the process of choosing an offshore outsourcer.

"You have cultural differences and other things that come into play when you're trying to describe any business process," Wendell said, "Most of the people [Global employs] over there are replanted from New York [and] worked in financial markets or other sectors in the U.S."



# **Sun and Pay Lure Coders** To Barbados Outsourcer

Islanders get training, jobs and investment

BY JULIA KING BRIDGETOWN, BARBADOS

Just a short stroll from a sundrenched, white-sand Caribbean beach is a 55,000square-foot software development center staffed by about 200 IT workers from India, Jamaica, Malaysia, the U.K. and elsewhere around the globe.

They work on software development and maintenance projects for U.S. clients, including J. P. Morgan & Co. and Prudential Insurance Company of America, which have both invested in the company, and Travelers Corp. and Pfizer

Workers' annual salaries range from \$30,000 for a programmer to about \$100,000 for | development

a senior project manager. Their perks include a rent-free apartment or house, regular maid service and free door-todoor transportation to and from work each day.

It's close, but it isn't Shangrila. It's PRT Group Ltd., a unique "near-shore" outsourcing facility for customers unwilling to ship information technology projects as far away as India or China.

It's already paying off for CIO Peter Miller, who said J. P. Morgan has benefited from significant cuts in application development time and cost.

The brainchild of Doug Mellinger, PRT's thirtysomething CEO, the Barbados launched after Mellinger had problems persuading executives to send IT work to another PRT offshore site in India.

'We started a search around the world for a place that would put us in the same time zone as the U.S., had a worldclass [communications] infrastructure, had English as a primary language and had government stability," he said.

#### Other Benefits

What he came up with was Barbados, a 166-square-mile former British colony with a 98% literacy rate, the highest per-capita income in the West Indies and a government willing to offer ultralucrative tax breaks and unlimited access to work visas and other permits for foreign IT professionals.

In return, PRT provides training, internships and jobs to Barbadian computer science students and is helping to develop an islandwide IT curriculum for elementary and secondary schools under a seven-year, \$230 million initiative known as Edutech 2000.

"Our strategy has always been to import brainpower from other parts of the world to help Barbados develop that talent internally," said PRT Barbados President Srinivasan Viswanatha, who is known to everyone simply as "Vishy."

Vishy left a highly successful post as head of Citicorp's offshore development center in India to join PRT Barbados in 1995. Eventually, several of his former co-workers from India joined him, as did programmers and software developers like Pamela Alleyne from Malaysia, Stephen Vitoria. a programmer/analyst from England, and Gail Campbell, a team leader from Jamaica.

Now, PRT Barbados is looking to get into the training and Internet application development business, having just signed a partnership agreement with Netscape Communications Corp. Within six months, PRT expects to hire 100 Netscape developers and

# TECHNOLOGY BRIEF

# Enterprises turn to Aviva product family to address the issue of dynamic change

Automating and simplifying the TCP/IP migration process

# Configure once, detect automatically

More and more corporations are migrating from SNA-centric networks to TCP/IP based i-nets [i.e., intranets, extranets and Internet access]. But this migration invariably means reworking the entire networking connectivity paradigm from the desktop to the data center, which involves extensive reconfigurations.

By automating the migration process, Aviva HotConnect from Eicon Technology reduces migration costs, facilitates phased migration, and ensures transparent fall-back in the event of a connection failure. HotConnect automatically detects the first viable network connection from a set of pre-defined connections, and uses that to establish end-to-end SNA sessions.

Many organizations don't want to migrate their entire user base to a new networking scheme overnight. They want to handle such migration in a controlled manner, with certain users, regions or applications being migrated to the new network, and the entire process spread over several months. Aviva HotConnect facilitates and automates such phased migration.

With HotConnect, network administrators can configure a desktop, just once, with all possible networking connections (including those types that have yet to be implemented). In addition, the configurations containing all the predefined connection types can be done centrally.

HotConnect's configure once/detect automatically technology provides a perfect migration strategy for corporations moving from SNA-based networking to TCP/IP-centric i-nets.

## Dynamic enterprise software: a parable

technology vendor develops an innovative solution to a customer requirement. It is well received and so it proliferates throughout the marketplace. Soon competitors appear and add new features and functions to their products. To regain the lead, the original vendor must add even more features. It's a vicious cycle that gets more vicious.

IT departments get bogged down with the incessant evaluation, implementation and upgrade cycles of the new and improved products. Users, growing disenchanted with the IT department's inability to provide for them in a timely fashion, turn to other sources for fulfillment, or do for themselves.

In time, duplication of effort and duplication of expense runs rampant throughout the organization. Worse, technologies are implemented piecemeal, and are not compatible with each other. The next step in the progression is chaos. This scenario has repeated itself many times in organizations.

It was change that necessitated the creation of IT departments. Ironically, few enterprises have developed strategies for addressing change as an issue in its own right. And with change accelerating, today's rapidly changing information technologies can not only inhibit growth but can also add to the escalating overhead and support costs associated with many host-reengineering projects.

To compete in today's dynamic marketplace, vendors must offer dynamic products—products that automatically accommodate reasonable change. Many vendors are just now starting to understand that their feature-rich static products do a great job. . .until something around them changes.

A dynamic product solution requires multiple choices up-front. Since there's no one proper way to implement a solution in today's rapidly changing, heterogeneous environment, a single product (typically distributed when implemented across an enterprise) needs to be available in different flavors. It needs to be presented as a product family, so a customer can mix members of the family to match a user's unique architectural requirement.

The installed dynamic products must be able to accommodate reasonable changes on the fly. For instance, most enterprises are migrating from legacy SNA connectivity solutions to a native TCP/IP protocol. Dynamic host access products should be able to change from one network connection to another to accommodate painless testing and migration.

As the migration from SNA networks to TCP/IP-based Web-enabled networks continues, and as integration of legacy and multi-platform environments accelerates, the confusion about how to best manage this change will increase dramatically.

Whether it's an end-to-end overhaul of the enterprise or an incremental migration to a new computing environment, one company is prepared to offer a dynamic product solution for the enterprise in transition. That company is Eicon Technology.

# Eicon pours foundation for IBM host access

Eicon Technology, a leader in remote access solutions, has partnered with Atlanta-based Syntellect Interactive Communications Inc., a provider of interactive communications management solutions.

Syntellect will use Eicon's Aviva Web-to-Host access products to enhance its Vista interactive voice response (IVR) servers with IBM host access for large-scale voice application integration. The Vista IVR server is an automated call handling system that provides users with around-the-clock, 365-day-a-year self-service.

The Vista system can host IVR, interactive Web response (IWR), computer telephony integration (CTI) and predictive dialing capabilities. Based on an open, industry-standard architecture, it allows users to call into institutions such as banks and insurance companies to access information by keying in data from their phone or Web browser.

Aviva software allows the Vista platform to query customers' mainframes, retrieve the desired information and report results via voice response back to the caller. Eicon's Webto-Host Server product provides basic IBM host access solutions through a number of connections, including SDLC, Token Ring and TN3270.

"The Aviva Web-to-Host Server product provides the tools that will enable us to reduce our workload and the time required to quickly create integrated solutions for our customers," said Tricia Lester, VP of product marketing for Syntellect. "For example, we use it as a foundation upon which we have built our IBM host access."

Eicon Technology (www.eicon.com) develops hardware and software products for connecting network servers and desktop and notebook PCs to corporate networks, host computers and the Internet.



# "Web-to-Host Connectivity for e-Commerce"

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Register at 1-800-80EICON x5400 or www.eicon.com/chicago Anura Guruge is considered by many the father of today's web-to-host architectures. He has designed many of the SNA-related features found in today's bridges, routers and gateways. This free seminar, sponsored by Eicon Technology, is a "must-attend" for administrators, managers and CIOs of 3270/5250 environments integrating the web and eCommerce.

Joining Anura will be representatives from ASAP Software Express to discuss "best practice" volume license management and electronic software distribution.

Both a Continental breakfast and a buffet lunch will be served, and each participant will receive a copy of Anura's book, "Reengineering IBM Networks."





# Novell, Compaq Team Up on Caching Server

Novell Inc. and Compaq Computer Corp. are working out a deal to jointly build a caching | spokesmen for both companies.

server to make it easier and cheaper for companies to download Web pages, according to

The companies confirmed last week that they're wrapping up plans and are slated to make an announcement about the effort at Novell's annual user conference, Brainshare, in Salt Lake City on March 22.

Novell now offers caching capabilities in its BorderManager software suite for network managers. A company spokesman said the new caching ef-

fort would be for single-use, stand-alone appliances.

The Novell spokesman said the caching appliance would be targeted at companies with many users who frequently download Web pages. Caching enables Web pages to be downloaded and held on the corporate network. That means the next employee who calls up that page won't have to wait for it to be downloaded off the In-

The Novell/Compaq team should have the capability to make the caching server "a high-performance product," said Richard Fichera, an analyst at Giga Information Group Inc. in Cambridge, Mass.

In a separate deal related to Web page caching, Intel Corp. licensed its Quick Web caching and compression technology to Sitara Networks Inc. in exchange for an equity stake in the Waltham, Mass., company.

Provo, Utah-based Novell also said it has released a beta version of Novell Directory Services 8.0 and announced a new version of its 32-bit network operating system, Net-Ware. Both products will be shown at Brainshare along with Novell's upcoming 64-bit operating system, code-named Modesto [CW, March 8].

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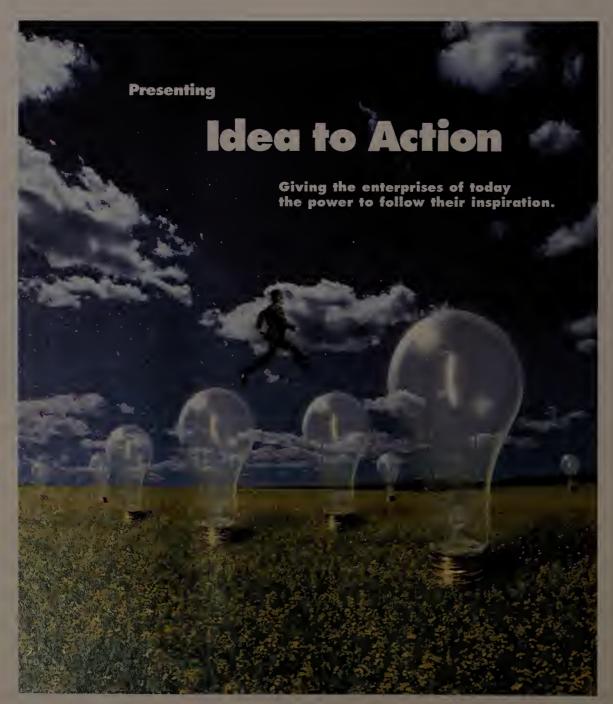
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# Patch for NT **Screen Saver**

#### BY ANN HARRISON

A security hole surfaced last week in the Windows NT operating system that could allow malicious users to elevate their access privileges via a screen saver hack.

The bug exploits a flaw in the winlogon.exe operating system file that triggers the screen saver and sets a user's level of system-access privileges. A cracker with physical access to a workstation could theoretically install a corrupted screen saver and add themselves as a logged-on user to a local network group.

Scott Culp, a security product manager at Microsoft Corp., said the company has received no reports of successful hacks using the security hole. Microsoft will issue a bulletin and a patch for the hole at www.microsoft.com/security and on its product security notification service.

# CHANGE IN THE WIND AT SLUMPING ERP VENDORS

PeopleSoft, SAP and others get stung by flat sales after years of rapid growth

LAT SOFTWARE sales are ushering in an unprecedented period of turmoil and change for SAP AG and other top vendors of enterprise resource planning (ERP)

More evidence arrived last week when PeopleSoft Inc. confirmed that it's looking for a new president to take over day-to-day management of the company from co-founder Dave Duffield.

The 58-year-old Duffield plans to continue as CEO and chairman; PeopleSoft officials said the search started last year before demand for ERP applications began hitting the wall.

But analysts said it's a time of transition for PeopleSoft, which laid off 6% of its workforce and changed its sales management in recent weeks.

The Pleasanton, Calif., company is also betting heavily on new intranet and business analysis applications to augment its core ERP software.

#### Sharing the Pain

Rivals such as SAP, Baan Co. and J. D. Edwards & Co. also are feeling the pain of lowerthan-expected sales as Asian companies cut spending and users run out of time to solve their year 2000 problems by installing packaged applications (see chart).

For Jim Dileo, senior vice president of worldwide information technology at The MacManus Group, a global advertising firm in New York, the

# **AMD Forecasts Large Loss** Officials said AMD is over

BY JAMES NICCOLAI

Advanced Micro Devices Inc., a chip maker that recently overtook Intel Corp. as the top seller of PC processors, said last week that it expects to report a significant loss for its

Chip maker to trim

workforce by 300

first fiscal quarter and announced plans to lay off 300 workers as part of a restructuring program.

It's the second time in a little more than four weeks that AMD has warned of an expected shortfall for the quarter.

The Sunnyvale, Calif.-based chip maker also said microprocessor shipments for the current quarter will fall short of its goal of 5.5 million by about half a million.

AMD officials acknowledged a manufacturing problem that reduced output in the first eight weeks of the quarter. the hurdle but added the problem dragged down the chip maker's output for the quarter. AMD has also been locked in a pricing battle with Intel.

The layoffs, which will be made during the next two quarters, are part of a restructuring effort aimed at increasing AMD's focus on microprocessors and other circuits

related to PCs, the company said in a statement.

AMD has started production wafers on

its seventh-generation processor, the AMD-K7, which is scheduled for introduction in June and is meant to compete with Intel's new Pentium III.

AMD's chips are used mainly in consumer-oriented PCs, but some have made their way into low-cost business and notebook systems.

Niccolai is a reporter for the IDG News Service in San Francisco.

#### JUST THE FACTS

#### What's Ailing **ERP Vendors**

SAP: Pretax profits dropped 15% year-toyear in Q4 1998

Baan: Lost \$295M in Q4 while laying off 20% of its workers

PeopleSoft: Laid off 6% of its staff after profits were basically flat in Q4

J. D. Edwards: Flat sales and lower-thanexpected profits in Q1

fact that everyone else is suffering means he won't get too concerned about PeopleSoft as long as it doesn't slip up on support. "Clearly, there's a market trend out there that's affecting all of [the vendors]," said Dileo, who's overseeing a PeopleSoft rollout.

But PeopleSoft isn't likely to hire a new president just "to come in and be a caretaker," he added. "I don't think we've seen the end of any changes."

SAP's U.S. subsidiary has been hit by the departure of several top executives since last fall, including this month's resignation of Jeremy Coote as president of the Newtown Square, Pa., unit.

"You lose relationships, and it's a pain in the rear end to re-

build them" when executives like Coote leave, said Colby Springer, CIO at MJDesigns Inc., an arts and crafts retailer in Coppell, Texas, that uses SAP's R/3 applications.

Otherwise, the turnover at SAP "is no big deal," Springer said. "Obviously, there's some turmoil there. But the software works, and that's the key part."

After SAP officials met with financial analysts last week, New York-based Credit Suisse First Boston Corp. (CSFB) cut its first-quarter revenue and earnings projections for the German vendor.

#### Sales Drop Expected

CSFB predicted that SAP's software license sales will drop 13% this quarter and fall another 6% in the second quarter before rebounding modestly later in the year.

But new applications such as front-office software and supply-chain planning tools are the keys to renewed growth for SAP and its rivals, said Josh Greenbaum, an independent analyst in Berkeley, Calif.

For users as well as vendors, "the strategic value of ERP is diminishing," he said. "It's now just something that gets you in the game."

# **Industry Group Seeks Antitrust Fund Cap**

The Computing Technology Industry Association, a trade group in Arlington, Va., has asked the Senate **Appropriations Committee to reject** the U.S. Justice Department's request for a 15% increase in funding. The department wants about \$16.1 million to hire an additional 124 workers in the antitrust division. The group criticized the recent antitrust investigations of Microsoft Corp. and Cisco Systems Inc., as well as that of the proposed merger of America Online Inc. and **Netscape Communications Corp.** 

#### **Short Takes**

SUN MICROSYSTEMS INC. and SYBASE INC. are teaming to develop products and services intended to speed development of Javabased Internet access devices for consumers and mobile workers. . . . **ORACLE CORP.** has acquired E-TRAVEL INC., which makes software to plan and book corporate travel using a Web browser. Oracle will integrate the software with its own travel-reimbursement software....LYCOS INC. board member David Wetherell has resigned in protest of Lycos' proposed acquisition by USA Networks Inc. Wetherell is CEO of CMGI Inc., a major Lycos

# **HP Promises to Ramp Up Internet Efforts**

CEO Platt says company will stress services, e-commerce security

put forth a much more inte-

BY JAIKUMAR VIJAYAN

With a split between its computer and measurement-equipment products now under way [CW, March 8], a major focus of Hewlett-Packard Co.'s com-

puter business going forward will be the Internet, according to HP CEO Lewis Platt.

"HP is widely perceived as having missed the first chapter of the Internet [revolution]," Platt told a recent conference of analysts in New York. "We intend to grated and compelling message" in the future. In particular, Palo Alto, Calif.-based HP will focus on providing highavailability services around the Web and secure

technologies such as its Praesidium authorization server and Virtual Vault encryption for electronic commerce.

HP's \$39 billion computing and imaging outfit will position its range of enterprise computing hardware, application software, levels. See page 72.

network management, database and storage technologies as the infrastructure on which corporations run their electronic-commerce applications.

HP last week also announced an Internet business unit to tie all of its Web-related softwarc and services into one organization. The unit will focus on delivering clectronicbusiness software, security technologies, customer relationship management software and services for vertical industry segments.

HP unveils tools to help ensure Web service



needs "integrated and compelling message"

MARYFRAN JOHNSON

# Spring in Novell's step

HEY'RE TOAST, everybody said. History. Hear that bell? It tolls for Novell. That was the prevailing sentiment two years ago, an eternity in today's Internet time. But, fortunately for this once-dominant PC networking vendor, its customers still live in real-world time, where patience sometimes pays off. There's a resurgence of faith in Novell today that no industry pundits predicted and few business partners anticipated. When *Computerworld* surveyed 109 information technology managers recently, a startling 71% expressed solid confidence in Novell's

future and 72% said they planned to keep buying its products [CW, March 8]. Another 26% were planning to use Novell Directory Services (NDS) with the long-overdue Windows 2000 when it finally arrives — rejecting Microsoft's own Active Directory in favor of NDS.

Novell is benefiting from the escalating importance of network directories, which are destined to be the central place to manage a chaotic lineup of IT resources.

As one IT manager told us: "When it comes down to maintaining the network, user accounts, files and applications, I need NDS for that. That's what saved Novell."

CEO Eric Schmidt certainly did his part. He dragged the moribund company back into the black through a number of painful-



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but-necessary moves.

Those included more than 1,000 layoffs, senior management upheavals and a wrenching technology shift from the proprietary IPX protocol to a "pure IP" strategy that underscores the certain future of Internet Protocol networks.

Yet as any gardener will tell you, spring can be a dangerously unpredictable season. Microsoft might get its Win 2000 and Active Directory act together one day.

Application vendors might not flock to NDS in sufficient numbers. Directories might end up as commodities, the way file and print servers did. But today, the sun is shining and no bells are tolling for Novell.

For thousands of IT shops, that's cause enough for celebration.

BILL LABERIS

# The press shouldn't put Gates on trial

RUE OR FALSE: Bill Gates is on trial in Washington, courtesy of the U.S. Justice Department. If you answered "true," you're wrong. But you can hardly be blamed. The press seems determined to turn this case into U.S. vs. Gates, and in doing so does a grave disservice to the information technology community and everyone involved in the technology purchase process. Just last month, in the space opposite this column [CW, Feb. 22],

Computerworld Executive Editor Maryfran Johnson invited some comparisons between the trials of Bill Clinton and Bill Gates, referencing "the trials... of the two Bills."

Therein lies the greatest disservice the press, in general, has done to corporate buyers in the whole Microsoft affair.

Bill Gates is *not* on trial as Bill Clinton was.

Microsoft is on trial.

There's a huge difference.



BILL LABERIS is a consultant in Holliston, Mass., and former editor in chief of Computerworld. Contact him at bill@laberis.com.

By putting Bill Gates on trial, the press has tried to highly personalize a business trial, but not before trying to color the target personality as a conniving, scheming, lying cheat.

Consider that much was made in the press about the fact that the lone information technology manager on the witness list was bumped at the last minute for a vendor witness, with the implication that Microsoft pays only lip service to users.

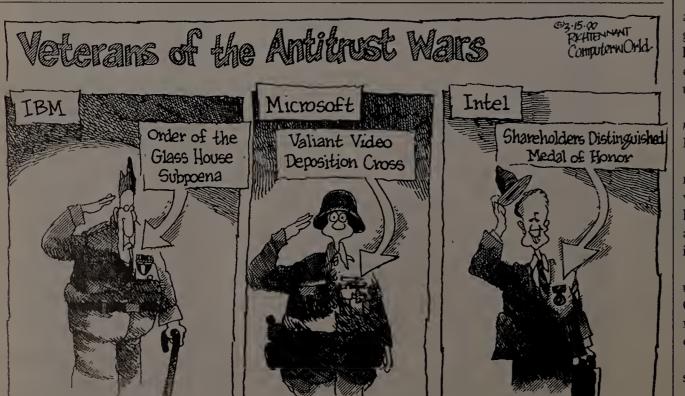
The truth is, that lone IT witness was a government witness bumped by the government, not a Microsoft witness.

Making comparisons between the CEO of the most successful public company on earth to a world leader who had sex with an intern 30 years his junior and then lied to every person and judge about it plays right into this unbraiding of the real issues in the Microsoft trial.

Instead, the press contributes to trying to get users to focus on personality instead of the law. Obviously, it's easier to throw a mud pie than to research, comprehend and then to clearly explain our very complex body of antitrust statutes.

The negative press isn't dampening IT's enthusiasm for Microsoft.

A report published last month, based on a study of 200 IT managers, showed 89% of them likely to



adopt Microsoft Office 2000 as a standard application platform.

Two-thirds of their servers will run NT or Win 2000 in two years, compared with 14% running Unix

That's the court that really matters: the people's court of technology purchasing. I would say the users already have rendered a verdict.

It's a verdict based on what works for users today and what they anticipate will work for them in the future.

Users don't look at this government-sponsored mess and then alter purchase decisions based on personalities created by the press. They are much too smart for that.

#### DAVID MOSCHELLA

# Fuzzy ad/content boundaries are no big deal on Web

Cruise drinking a Coke, how do you know whether the moment was captured for art or for money? If Tiger Woods tees up a Titleist, how do you know whether he thinks he's playing the best ball in golf, whether he's contractually obliged to use it, or both? If your airline serves up New Zealand chardonnay, how do you know whether the food services staff wants to bring you the wines of the world or some economic development board from Auckland gave them minibottles for free? These questions



DAVID MOSCHELLA is an author, independent consultant and weekly columnist for *Computerworld*. Contact him at

come to mind as I ponder the many recent stories bemoaning the fact that the boundaries between ads and information on the Internet aren't always

Despite the natural urge to concur, I can't avoid the view that we will all have to get used to it.

In the physical world, there are a thousand examples of endorsements for sale.

Typically, we don't

know or care about the underlying motivations of many of the companies we deal with. Cyberspace won't prove to be all that different.

It's hardly surprising that the media shows particular interest in this issue.

Newspaper and magazine professionals understandably take great pride in the fact that, in their world, there is usually (although certainly not always) a wall between the editorial and advertising processes. It's the prime source of that irritating holier-than-thou attitude journalists sometimes exude.

But there are several reasons why that culture won't become dominant on the Web.

For one thing, the Web isn't primarily about publishing. Sure, publications such as *The Wall Street Journal* and *Computerworld* will likely transfer their traditional values from print to electronic media. But publications account for only a minority share of the Internet advertising business.

When businesses such as booksellers and stockbrokers move to the Web, they too will transfer their traditional values to the new medium — meaning they will instinctively pursue advertising strategies that favor their friends and snub their foes.

Public pressure can temper — but not alter — that reality. More important, the line that determines what is acceptable is still moving, and there is much money to be made by staying as close to the line as possible.

A decade ago, we would have been shocked if TV sports broadcasts superimposed rotating ads behind a baseball batter, but it has become commonplace.

One can hardly blame Internet companies for

testing what the market will, and won't, bear.

The irony is that so-called "crass commercialism" is the inevitable result of the Web's never-pay-for-information culture. We all know that generic banner ads alone aren't enough to support all the information and services we want from the Web.

Only by tying advertising directly to our individual interactions can companies justify spending the really big bucks. That means it's actually in our interest to find acceptable ways to use our searches, links and interests to generate relevant marketing materials.

Although it often feels counterintuitive, we should always keep in mind that we are not users of, for example, Yahoo's products — we are Yahoo's product. It's our eyeballs that are being sold to advertisers. Similarly, search and free e-mail services aren't really products.

The products aren't free, but the bait is. And the tastier, the better.

But to complain too much about the nature of the bait or what happens after it's eaten is a bit like feeling sorry for the fish.

You may have a valid moral point, but don't be surprised if the fishermen aren't really listening to you. After all, fishermen are businessmen, not publishers.

# READERS' LETTERS

## 'Golden oldies' don't have have it so bad

FIND IT HARD to sympathize with older IT workers expressing difficulty finding re-employment ["Golden Oldies," CW, Feb. 8]. (Yes, I am in my 20s, and my view will probably change if I find myself in the same boat 20 years from now.)

A few years ago, I found it almost impossible to find an IT job even though I had solid skills. I was interviewing with many of these "old school" IT managers. Since I was young and had a ponytail, I was quickly discarded as a candidate.

I have since been able to work and consult on some great projects and prove my skills.

Every now and then I see one of these managers who has been downsized and is now in sales. When they ask if I am interested in suchand-such product for our

networks, I tell them, "No thanks," and make sure they remember the ponytail that I still have.

They wouldn't remove their blinders for me, so I why should I sympathize with them? Shawn Button

Shawn Button
Senior IS Manager
Downing Thorpe and James
Boulder, Colo.
sbutton@dtjboulder.com

I'LL BE 51 in a couple of weeks and I am overemployed. I have enough projects to keep two or three people busy.

Why? Because I study. I spend my own money on books, software and equipment to improve my skills.

I don't chase fads, but I do try to tap major trends. However, I am not an employee and have no desire to be one.

I am a consultant employed through a consulting firm.

Am I expensive? Yes.

Am I worth it? Apparently — I have been on my primary assignment for more than a year.

I also do little jobs on the side, for which I charge a higher rate.

Younger people with finely polished client/ server skills should be wary.

Client/server was yesterday's hot trend.

Steve Hovland
Walnut Creek, Calif.
74270.765@compuserve.com

# We need more Y2K data, less speculation

s A SYSTEMS professional, I've read with interest the letters and columns in Computerworld concerning the potential for year 2000 problems. While the tone has run the gamut from nonchalant to doomsayer, there is one common aspect: They are all speculative.

It would be interesting to me if *Computerworld* would poll the major organizations that have already done considerable corrective work on their systems to find out how many bullets have been dodged as a result of their effort. I would be especially interested in hearing about faulty date logic that could have caused significant problems if left undiscovered.

With this information, we might be able to come to some informed conclusions about how much danger really exists and where to focus our search for problems. Edward A. Forbes Honey Brook, Pa.

Edward\_A\_Forbes@

Vanguard.com

computerworLD welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Maryfran Johnson, Executive Editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 875-8931; Internet: letters@computerworld.com. Please include an address and phone number for verification.

# NEWSI

#### HELEN PUKSZTA

# Have courage to go beyond immediate business needs

NE ADMONITION that relentlessly resurfaces in IT conferences and publications is that we should never pursue technologies that don't have a clear connection to business requirements. On the surface, this sounds anywhere from platitudinal to sensible. In reality, putting this statement into practice can be like putting blinders on IT vision. To align business and IT, we're told to get IT so close to the business that we will hear and react only to what the business



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itself tells us. We're told to banish those "elegant technologies in search of business problems" and to follow what the business strategy unfolds as the right technology path. These pronouncements can turn into misguided advice as they don't consider the possibility that it's OK to look for business problems to match a promising technology.

New technological developments rarely find

us with a well-formed understanding of their potential or with strategies that incorporate them. No one knew exactly how the telephone would change our lives at the time it was invented. Industry pundits decades ago made predictions about demand for computers that turned out to be plain wrong. And in recent history, few had foreseen the impact the Internet would have on businesses.

It's not easy to identify a business need demanding a technological innovation because, until the innovation becomes a commonplace reality or has been adopted by competitors, the business gets by just fine without it. So expecting business requirements to point conveniently to a new technology is hardly realistic.

Before the advent of the Internet, eliminating distribution channels to establish direct links with customers wasn't a viable option for many industries. Yet today few organizations can afford not to pose the question of how their distribution - indeed, their business model - can be changed with the help of the Internet.

Even fewer can ignore the question of how their competitors will react to the nascent opporrunities. Here, the Internet technology with its multitude of solutions has indeed been looking for business problems to solve. In defiance of

popular wisdom, the new business requirements haven't been conceived independently of, but in direct response to, this new technology.

After a conference or two, you may be tempted to stamp out the tendency of programmers to pursue hot and fun technologies with seemingly little relevance to your business needs. But before you do that, keep in mind that small-scale experimentation with new technologies can pay off with new insights and new uses of IT that not only your company but also your competitors may not have considered before. The key is to have an open mind and the creativity to see the possibilities and to sell them to the business at the right moment.

Many of the celebrated competitive-advantage implementations started out on a small scale as bottom-up efforts and only later — often to everyone's surprise — blossomed into strategic systems.

I'm not advocating overengineered, unstable or irrelevant solutions — in the end, whatever you build had better deliver business value. But to decide effectively what might produce that value is to walk a fine line between technological complacency and experimentation and between following the business and leading it to new opportunities.

JOHN GANTZ

# With Jini, what happens if we get our wish?

Y NOW YOU should know about Jini. It's Sun Microsystems' dramatic follow-on to Java, announced officially in January. What makes it dramatic is its potential for spectacular success or spectacular failure. I doubt there's any room in between.

The brainchild of Sun founder Bill Joy, Jini is software that sits on top of

Java virtual machines and essentially lets any platform under it automatically announce itself to the Internet (or intranet) and make itself available for use.

JOHN GANTZ is a senior

vice president at International Data Corp.

in Framingham, Mass. Contact him at

Devices and applications use a process known as "discovery" to register with the network, then place themselves in a "lookup" service and become available to other network users under terms defined by their owners. When a device joins the network, it's on for only a certain length of time, after which it's removed.

In Sun's vision, every device on the planet has a Java virtual machine in it, and Jini is the glue tying them all together. A number of vendors including router manufacturers, PC companies, personal digital assistant manufacturers, software companies and cell-phone companies — are licensing the technology. Noticeably absent is Microsoft.

This is plug-and-play for cyberspace. With Jini, the Internet itself becomes the computer, or at

I like the idea. All the network at your beck and call. No cumbersome installation procedures. No need to store a thousand drivers on your system in case you might someday add a printer or graphics board. Resource sharing.

But will it work?

I've run the technology through the same evaluation model my company uses to test the commercial viability of other emerging technologies and found the "brass ring" scenario (wild success for Sun) for Jini is only a little more likely than the "black hole" scenario (a terrible waste of R&D funds).

And I don't know which scenario would be worse for IT professionals.

If Sun is not successful, we may be locked in to successive generations of ever more complex Microsoft operating systems all trying to coexist with a cyberspace that is expanding faster than the real universe. In an ideal world, we would be computing using software, objects and data that are kept in cyberspace rather than on our hard drives and servers and downloaded only when we need them. Because this is a tough assignment for the Microsoft architecture, in this scenario we waste a lot of the potential of cyberspace.

But if Sun is successful, we have another problem. Let's say Jini is a smashing success and we can set up ad hoc networks without network administrators; our LANS extend to the farthest corners of the earth; and we can communicate with not only our PalmPilots and Nokia phones, but also our refrigerators and sump pumps.

Jeezum crow, how do we deal with that? How do we know what capacity to plan for on the Jini devices we put on the Net? How do we make sure we are in the right ad hoc Jini networks at the right time? How do we know which devices and applications will show up in the discovery registers when?

Will all of Jini computing become a continual online scrounge for available resources? If we can build applications using bits and pieces pulled down from Jini nets (or accessed in place), what happens to those years of training in waterfall design, structured programming and rapid application development? Do we uninstall all the software we bought to help us make NT run better? Do we have jobs?

Jini could change computing as we know it. It's more revolutionary than the LAN, which changed computing quite a bit, and once it's out of the bottle, it won't go back in. It's one of those technologies that truly could be beneficial — but confounding at the same time.

Guess we'll have to wait and see.

# ARE YOU GETTING WHAT YOU NEED FROM YOUR NETWORK OPERATING SYSTEM



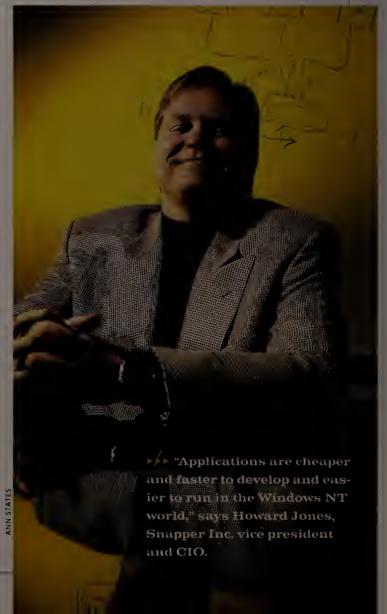


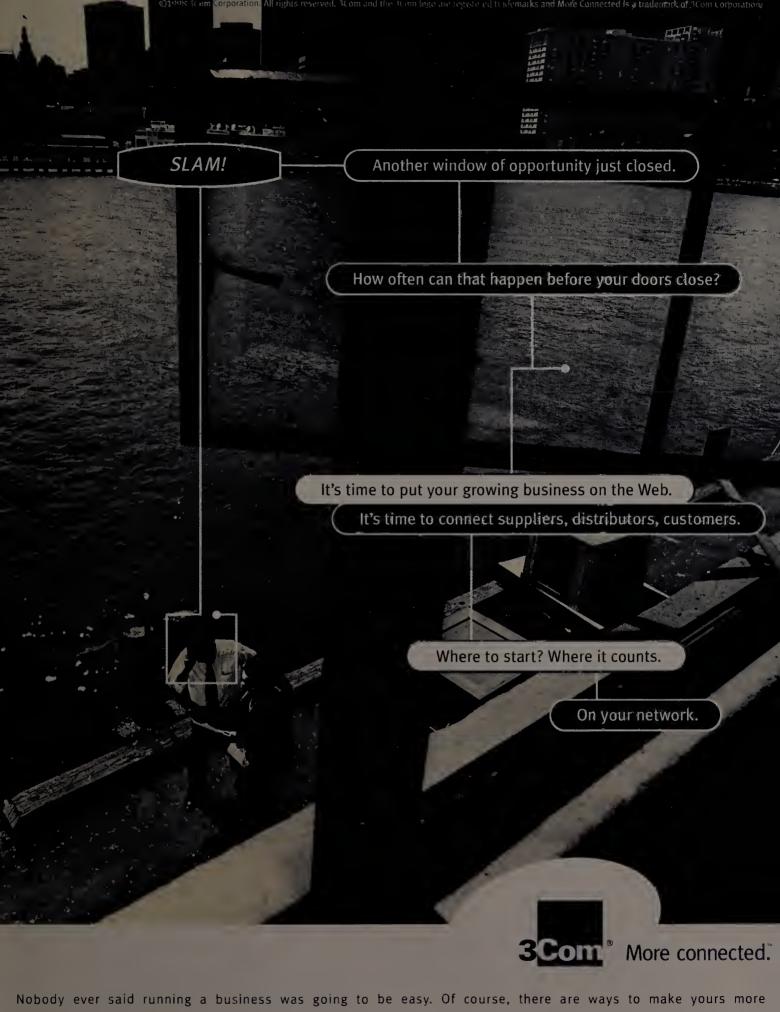
Productivity
soars when an
OS goes
beyond the
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includes the
full range of
networking
services

# ARE YOU GETTING WHAT YOU NEED FROM YOUR NETWORK OPERATING SYSTEM

Productivity soars when an OS goes beyond the basics and includes the full range of networking services

napper Inc., a midsize manufacturer that produces 120 different lawn products from its plant in McDonough, Ga., knows IT operating systems. It has experience with the IBM AS/400s, Novell NetWare, and Microsoft® Windows NT® Server. But when it came time to determine a platform for a critical sales force automation application that needed to integrate with a wide range of backend systems, the company chose Windows NT Server without hesitation. "Applications are cheaper and faster to develop and easier to run in the Windows NT world," explains Howard Jones, Snapper Inc.





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vice president and CIO.

A year ago Adaptec Inc. found itself wrestling with too many network servers. At its Milpitas, Calif., headquarters alone, it had over 75 NetWare servers providing file and print services as well as basic application and database services. Each NetWare-based application required its own server due to reliability issues, and the number of support administrators kept growing. By switching to Windows NT Server 4.0, Adaptec can run multiple applications and databases on

connected to the LAN. They want to use rich, new types of information, such as IP-based telephony and audio and video. And, they want to leverage existing systems to provide strategic advantages. At the same time, they want to ensure a smooth migration to a more open, flexible infrastructure—one where servers can be re-purposed as needed. And IT, business managers insist, must provide it all in a way that ensures security and reliability.

At the same time, global com-

tem, such as Microsoft Windows NT Server. Multi-purpose operating systems incorporate a range of functionality: file and print serving, application services, Web services, communications, and more, observes Jean Bozman, software analyst, International Data Corp. (IDC), Framingham, Mass. But the value goes beyond functionality; multi-purpose operating systems like Windows NT Server also integrate the functionality with a set of management tools and services and a common directory that en-

sures that the result is far greater than the sum of the parts.

In response, IT managers at midsize companies are looking to consolidate and

standardize. "You want to have uniform, consistent capabilities, which is how you can control cost of ownership," advises Brian Connelly, CEO, Enterprise Communi-Messaging Solutions (ECMS), Inc., Columbia, S.C., the systems consultant that developed the Snapper sales force automation solution. With uniform, consistent behavior across all systems, applications can be built faster and cheaper, fewer administrators are required, and training is reduced. You also achieve easier, more complete interoperability.

By switching to Windows NT Server, for example, Adapted not only was able to reduce the number of administrators by about 30%, but each administrator "could do much more than administer a server," Fernandes explains. Because the operations are GUI-based, administration is easy and consistent across services, which allows Adapted's server administrators to also handle the databases and the applications.

→ Continued on page 8

# "There is no question that reducing the number of operating systems can lower costs." -Jamie Lewis, president, Burton Group

the same server platform and consolidate its file and print services without compromising reliable file and print, reports Ryan Fernandes, Adaptec network operation manager.

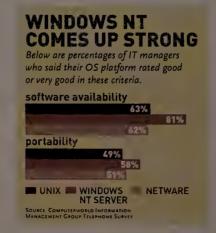
As Adaptec and Snapper have discovered, in today's complex and high-pressure IT environments, anything easier, faster, and less expensive will be welcomed. Where one technology can do the job of two or three, and do it as well or better, it is sure to be embraced by IT groups, especially midsize ones that may lack specialized resources.

#### THE BIG SQUEEZE

Organizations today find themselves increasingly squeezed. Business users are demanding more IT services and capabilities. They want reliable and fast file and print sharing, as usual, but they also want email and messaging. They want rich standards-based intranet solutions and database applications that are as easily accessible by remote users as by employees petition is forcing organizations to cut costs. The IT group is under the gun to do more with less, and reduce the cost of ownership. Midsize organizations, for example, no longer can maintain multiple IT platforms and train different sets of administrators. As a result, every aspect of the IT function is open to question: training, the number of administrators, the mix of vendors and platforms, and more.

#### DOING MORE

Key to controlling costs while delivering the enhanced IT services is the multi-purpose operating sys-



### YEAR OF THE RAS-VPN

Windows NT Server delivers open communication

o work effectively, people need to communicate and access information easily and efficiently. With the advent of the Internet and e-commerce, organizations need open, flexible, interoperable solutions — not the proprietary point solutions of the past.

Today, open systems — server-based systems that allow organizations to pick and choose among a wide choice of diverse yet interoperable hardware and software products — are enabling companies to change the way they build and manage voice and data networks. Citing a second generation of products and falling prices, IDC projects the RAS (remote access services) market to exceed \$700 million, reflecting a 51 percent CAGR since 1998.

Windows NT Server is the open systems platform for a new generation of simpler, more affordable communications. Organizations today dramatically reduce costs, and increase productivity, by connecting telecommuters, mobile employees, satellite offices, and extranet partners with Windows NT. Windows NT Routing and Remote Access Service and VPN (virtual private network) capabilities facilitate remote access management. Using the Internet and direct private-line connections, Windows customers can easily deploy integrated networking solutions that optimize their application and security needs in the most efficient way possible. According to Infonetics Research, San Jose, Calif., the number one remote access strategy for companies is to deploy a combination VPN/direct-dial service.

Windows NT Server is also helping to dramatically reduce remote access deployment costs with the Connection Manager Administration Kit (available in the Windows NT Option Pack). Using this tool, organizations can centrally configure and deploy single sign-on remote access clients for direct-dial and VPN. Windows NT Server's centrally managed phonebooks ensure these clients can easily access up-to-date local RAS or VPN dial-up phone numbers to make least-cost connections. "By building in and integrating secure VPN, routing, and direct-dial services, we make connecting users and offices easy and safe to use," explains Microsoft's Mike Nash.

Windows NT Server, IDC reports, currently can



support hundreds of simultaneous RAS users and Windows load balancing services, and embedded solutions promise even more scalable VPN services. Windows 2000, IDC adds, will handle significantly more simultaneous RAS users.

HIGH-TECH HOTEL Organizations of all sizes are capitalizing on the integrated communications services of Windows NT Server and innovative network-aware applications. For example, using a Windows NT-based solution, the San Jose Hyatt hotel was able to extend to its high-tech clientele fast, easy, and secure high-speed access to the Internet so they can be more productive while on the road.

The hotel's primary business customer is laptop equipped and travels frequently to Silicon Valley. Through Windows NT Server and San Diego-based ATCOM/INFO's IPORT secure, reliable, public Internet access solution, the hotel is able to provide information and high-speed Internet connectivity in more than 250 of its rooms. The service makes available high-speed Internet links for guests to use to connect to their company networks with Windows VPN services. "Since we turned it on last April, we've experienced steadily increasing usage," reports Jeffrey Burg, executive assistant manager. Now the hotel is looking at more integrated application services it can provide to better service its high-tech clientele with Windows NT Server.

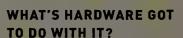
# COMPAQ AND MICROSOFT: BETTER PARTNERSHIPS= BETTER SOLUTIONS= BETTER ANSWERS FOR CUSTOMERS

CIOs and IT managers today are faced with some pretty tough questions:

- ▶"How do I demonstrate IT business value?"
- ▶ "How do I ensure secure network access from anywhere, anytime?"
- ► "How do I create a flexible, scaleable IT infrastructure?"
- ▶ "How do I manage my heterogeneous network?"

Many organizations have already selected Windows NT Server to meet their computing needs.. With any

server deployment comes risk – risks of mis-planning for a growing business' needs, risks of inefficient deployments, and risks of complex and costly operations. How does IT management minimize these risks? Wise choices.



Does hardware make a difference in deploying Windows NT servers? You bet it does. Deploying a scaleable and highly available Server requires a reliable, standards-based hardware platform that helps customers to achieve and sustain competitive advantage, achieve quicker return on their server investment as well as reduce complexity and costs in their IT environment.

Not every hardware vendor is equipped to deliver the kind of performance. Compaq's long-standing partnership and history with Microsoft ensures that both, the server software and hardware are stress-tested, coengineered and fully optimized for highest performance and reliability. Compaq ProLiant represents the most stable computing environment for running Windows NT based Networking and Application Servers.

There are four main factors that make Compaq Pro-Liant the platform of choice for Windows NT Server deployments: Fruits of the Frontline Partnership, Shared Commitment to Reducing Complexity, Engineering Excellence and Value-Added Services.

#### THE PROOF IS IN THE PARTNERSHIP

Compaq's close alliance with Microsoft strengthens its ability to support Windows NT Server deployments

with minimum risk and maximum cost effectiveness. Compaq has more hands-on, real-world experience with

> Windows NT Server than anyone else in the industry. In the past 4 years, Compaq has helped over 3 million users migrate from a multitude of environments to Windows NT. In fact, Microsoft recently named Compaq the first worldwide Prime Integrator for Windows NT.

> Compaq has fostered a close relationship with Microsoft for over 15 years

- dating back to 1983, formalized as the Frontline Partnership in 1993. This partnership has provided customers a superior Windows NT server platform that is simple to install, easy to use, and provides excellent value and performance.

The simple reason that the Compaq/Microsoft combination has won over so many customers is that it simply works better and more reliable than competitive solutions. From simplifying installation, to being able to accurately configure the solution, to operating with peak performance, Compaq ProLiant/Windows NT-based solutions make IT management's task easier, the customer's business more productive — and ultimately, through increased uptime and decreased costs of ownership — more profitable.

#### COMMITMENT TO SIMPLIFICATION

Compaq and Microsoft alike recognize that deploying enterprise-class networks and applications is often a complex, time and resource-straining task for customers. With a co-commitment to simplifying the planning, deployment, and operation of Windows NT-based networks and solutions, Compaq provides expertise and smart tools that enable customers to re-



duce complexity, save time and resources over the life of the server and continues to deliver customer-driven innovations that address key challenges in the IT environment.

Compaq ActiveAnswers for example is the industry's leading online destination for enterprise computing solutions and services. ActiveAnswers serves as a information hub for re-

sellers, VARs, solutions integrators, consultants, ISPs, Web developers and self-integrating companies to gain

access to over 40 jointly developed and fully tested solution areas.

Microsoft is one of Compag's

#### Compaq and Microsoft were the first vendors to break the \$20/tpmC barrier with the most recent ProLiant 7000 / Windows NT 4.0 TPC-C benchmark.1

**DID YOU KNOW?** 

the clear lead in the

with more than twice

► Compaq commands

NT server market

the volume of the nearest competitor...

- In the past four years, Compaq helped over 3-million users to migrate from other NOS environments to Windows NT...
- Compaq has nearly 4 million seats of Microsoft Exchange under deployment contract

premier ISV partners participating in the co-development of ActiveAnswers. Today, users can gain access to ActiveAnswers for Microsoft Windows NT Server 4.0, where they will find proven methods and best prac-

tices for developing and deploying Windows NT 4.0 based networking platforms, as well as ActiveAnswers for various Microsoft Solutions like MicrosoftExchange, Microsoft Site Server, and Microsoft Internet Information Server.

#### **ENGINEERING EXCELLENCE**

Compaq and Microsoft engage in many co-engineering and testing efforts including benchmarking, architecture development, and developing lifecycle enhancers.

The Compaq ProLiant family of servers has made headlines for its technological innovations with Fibre Channel, HotPlug PCI, its SmartStart installation tools and

available sizing and configuration tools for Windows NT Server based solutions. Combining Compaq Pro-Liant with Windows NT delivers customers the most optimized platform for networking infrastructure as well as application server deployments.

#### **ENHANCING SOLUTIONS WITH SERVICES**

One of the crown jewels of Compaq today is its Services Organization. Its portfolio of customer-proven services features Windows NT-related offerings including: Enterprise Windows NT Services, Microsoft

"Compag and Microsoft work together at a fundamental level to provide the highest possible levels of integration, reliability and performance. The Frontline Partnership works for our customers."

- Eckhard Pfeiffer, President and CEO, Compaq Corporation

Exchange Services, Internet/Intranet Services, Financial Services Industry Solutions, Intelligent Network Service Solutions, Lifecycle Services, Support Services for Windows NT and High Availability Services.

Compag Services boasts more Microsoft Certified Solution Developers (MCSDs) and Microsoft Certified Solution Engineers (MCSEs) than any other vendor combined. MCSE and MCSD represent the highest certification level for Microsoft technologies, and Compaq currently has over 2,200 professionals certified at this level and will add 1,000 more by the end of 1999.

#### WHAT'S NEXT FOR THE COMPAQ WINDOWS **NT SERVER PLATFORM?**

1999 presents a unique balancing-act challenge for CIOs and IT managers – as they address questions about network management, scalability, reliability, and reducing TCO, they also face the additional question of "Will our organization be Y2K resilient?" After the Y2K milestone comes and goes, attention will refocus on creating the web-enabled enterprise. As the demand for multi-dimensional and inter-connected supply chains increases, enterprise customers will turn more and more to the Internet extending their networks into "business ecosystems." The flexibility and robust nature of Windows NT provides the digital nervous system for bringing these ecosystems to life. Together as

business partners, Compag and Microsoft will continue to work to make



these ecosystems interoperable, secure, manageable and affordable. That's what the Compaq and Microsoft partnership is all about - delivering best of class enterprise solutions to customers worldwide.

THE COMPAG AND WINDOWS NT SERVER 4.0 ADVANTAGE:

http://www.compaq.com/partners/microsoft/products/nt4desc.html

COMPAQ ACTIVEANSWERS FOR NT SERVER 4.0:

COMPAQ/MICROSOFT FRONTLINE PARTNERSHIP: http://www.compaq.com/partners/microsoft/about/index.html

COMPAQ PROLIANT SERVER INFORMATION:

#### ← Continued from page 4

"We are getting more bang from our administrators," he reports.

In the past, IT has turned to specialized operating systems to perform different functions. This came about because of the limitations of the technology at the time, particularly PCs. "A PC with a 386 processor simply couldn't run big databases or applications, which is a key requirement for serious business servers," explains Mike Nash,

operability and efficient, effective administration and management.

#### WINDOWS NT SERVER **DELIVERS BENEFITS**

As its term implies, the multi-purpose operating system includes a range of capabilities. Ideally, the multi-purpose OS will allow the organization to easily enable or disable particular functionality as dictated by the organization's situation, explains Jamie Lewis, prescess services.

- ►Integrates advanced features such as virtual private networking and streaming media.
- ► Provides efficient management and administration, with enhanced hierarchical directory support coming shortly.
- ►Offers a robust, tightly integrated security model that delivers complete security through a single, efficient security process.
- ▶And all of these features come

wrapped with an inte-

#### grated set of services that enable organizations to efficiently administer their open, distributed systems environment.

Ultimately, the payoff from the multi-purpose operating system is more effective computing, "There is no question that reducing the number of operating systems can lower costs," says Lewis.

The lower costs are achieved through savings that result from the simplified, consolidated computing environment due to advariced, tightly integrated functionality and consistent security. This allows IT groups to redirect administrators toward higher value work. Adaptec, for example, cut more than 30 servers as well as redeployed its administrative staff. Particularly for smaller and midsize companies, Lewis concludes, "the multi-purpose operating system will become more important."

Over the past several years,

#### "Windows NT is already a requirement for success among virtually all industry vendors."- International Data Corp.

director, Windows® Server and Infrastructure Product Marketing Group at Microsoft. Organizations that needed sophisticated application or database serving were forced to buy RISC-based hardware running Unix and operate it alongside their PCs.

Suddenly organizations were running three or more operating systems and deploying dedicated proprietary point solutions. This created headaches for the IT group, requiring them to hire and train administrators for each OS, and to try to forge some level of interoperability between platforms.

"In the 1980s it was all we could do to knit PCs together. In the 1990s, we want better interoperability. We also want more capabilities, including integrated Internet," IDC's Bozeman notes, explaining the evolution from network operating systems that simply allowed organizations to tie together PCs to today's multipurpose operating systems that integrate a wide range of functionality. Moving forward, organizations will not only want that range of functionality but seamless interident, Burton Group, Salt Lake City. This reduces the investment risk while providing the power and scalability of dedicated servers.

Windows NT Server offers the kind of multi-purpose capabilities once associated with more costly and often proprietary platforms. Highly modular, Windows NT Server enables midsize organizations to pick and choose functionality and add new functionality as needed. Specifically, Windows NT Server:

- ▶ Provides fast and reliable file and print.
- ► Handles sophisticated applications and complex relational data-
- ► Offers Web application services, as well as advanced communications with integrated remote ac-

#### WINDOWS NT GAINS ON UNIX. NETWARE

Percent of business applications supported by each operating system today and two years from now (base of 201 respondents)

applications	today	2 years	% of change
We Nicheric 1991	30.0%	31.0%	+3.6%
NTSERVER (180 /aspenses)	31.6%	6.6.7%	+39.3%
NETWARE (\$61 recognizes)	27.7%	17.6%	-36.6%
	10.9%	7.4%	-32.4%

#### **WIRED MEDICINE**

Windows NT streaming media helps with healthcare training

treaming media—rich, synchronized audio, video, and Web pages—plays an increasingly important role in organizations. Many companies are turning to streaming media over the network to reduce training costs by eliminating the need for workers to travel to training sessions. At the same time, it can provide a better training experience to more people.

Windows Media Services in Windows NT Server, for example, allows Partners Healthcare System, Boston, to literally put its medical expertise on the Web. The health organization, closely affiliated with the world-renowned Massachusetts General Hospital, is committed to educating physicians and healthcare professionals. Having already standardized on Windows NT Server, the organization had no trouble adding audio/video to its educational offerings, reports Joseph Kvedar, director of telemedicine.

"In the past, we brought people into an auditorium. Now they can access the same thing through a Web site using their browser and the Windows Media Player," Kvedar explains. Though it's not quite the same, he adds; it's better. Through the Web site viewers can simultaneously access supplemental information, such as PowerPoint® slides. The result is a richer experience for users. At the same time, Partners is able to reach a broader audience while saving time and money.

Windows Media Services
allowed Partners Healthcare
System to easily add audio/
video to its educational offerings, says Joseph Kvedar,
director of telemedicine

Microsoft has shaped Windows NT Server into a leading multi-purpose operating system. IDC concludes: Windows NT will lead the OS market. This growth, IDC notes, will come at the expense of Unix and other operating systems.

#### **PROOF IN PERFORMANCE**

Market acceptance can be attributed, in part, to performance. In testing by Mindcraft Inc., Los Gatos, Calif., an independent test lab, Windows NT Server as a file server performed 25.5% faster than NetWare 5 when configured with out-of-the-box settings that customers can actually apply in real world environments. When performance is correlated to cost, Mindcraft found that Windows NT Server 4.0 provides 2.7 times better performance for the price (www. mindcraft.com/whitepapers/nts4 nw5filesvr.html). In Web performance tests Mindcraft found Windows NT Server 4.0 to be four times faster than Solaris 2.6 with its Web server and it offers 10.3 times better price/performance (www.mindcraft.com/whitepapers/ nts4sol26web.html).

Windows NT Server also enjoys widespread industry support from thousands of hardware vendors, independent software vendors, and support services companies. "There are over 200,000 professionals trained on Windows NT, more than with any other platform," says Microsoft's Nash.

Windows NT Server 4.0 clearly delivers. "The application we built for Snapper could not be built on NetWare," Connelly insists. The application for Windows NT was quicker to build and used less hardware than would be the case with other operating systems, and it is also more scalable and easier to administer, he adds.

→ Continued on page 12

#### **SERVING UP APPLICATIONS**

#### Windows NT Server takes business to the Web

t the heart of every business are applications that allow the organization to take orders, buy inventory, deliver goods and services, and perform a host of other activities.

An application server is a group of software services that support the creation of robust, scalable server applications, which are accessible from browser and non-browser clients.

Windows NT Server is widely accepted as a leading application server. Thousands of independent software vendors target their applications for the Windows NT platform. These vendors are taking advantage of the rich application services provided by features such as Microsoft Transaction Server (MTS) and Microsoft Message Queuing Services (MSMQ) in building n-tier distributed applications.

For example, MTS provides the services a Windows NT application needs to be distributed, secure, and transactional. With an easy-to-use programming model, MTS makes these application services available to mainstream developers, allowing them to spend more time on business problems.

As an application server, Windows NT Server enables the rapid development of

barnesand noble com

applications. It provides a robust, secure transaction environment able to handle business-critical applications and offers messaging and queuing for interoperability. In the process, it delivers efficient database pooling and load balancing, ensuring that the organization gets maximum performance from its systems. All of this technology is unified by a single component model, making it easier to integrate and evolve applications. By capitalizing on the power of component-based application services, organizations can take their existing products and re-deploy them on the Web as Windows DNA (the Microsoft ntier architecture) solutions easily by leveraging the application services in Windows NT Server.

BUILT FOR THE WEB With Web connectivity built directly in Windows NT Server, organizations can position themselves to tap into a rich and growing e-commerce environment. The integrated application services provided by Internet Information Server (IIS) in Windows NT lets organizations use

the Internet to share information or provide rich Web-based application services.

For example, 1-800-Flowers Inc., Westbury, N.Y., a direct marketer of flowers and e-commerce pioneer, initially built its Web commerce system inhouse. "When application services like MTS and IIS became available, we liked what they had to offer. We have been able to build an enterprise class Web

I-800-FLOWERS

site by leveraging the strengths of the Windows NT Server," recalls Donna lucolano, vice president, interactive services.

The 1-800-Flowers Web site is built on top of the application services found in Windows NT Server and integrates with the back-end order processing and fulfillment systems, which are built on an Oracle database and run on the Unix platform. The company runs a mix of Windows NT and Unix servers. Says Iucolano, "Windows NT is a powerful platform for developing distributed applications. Our programmers can focus on the business tasks at hand because they have a seamless development environment based on the integration of Windows NT Server, the application services, and the development tools." Windows NT Server also provides a very scalable environment. "Our business is seasonal and Windows NT is also easy to scale up for peak times," lucolano explains.

Similarly, barnesandnoble.com, the Web commerce arm of Barnes and Noble, adopted Windows NT Server for its platform and systems infrastructure when it launched its online business in 1997. The giant bookseller chose Windows NT Server 4.0 for its scalability and flexibility, notes Ben Boyd, vice president, communications.

Windows NT Server has proven itself. Barnesandnoble.com experiences 19 million page views on average each week. It has been cited as the thirdlargest e-commerce site. "Windows NT Server and its application services are the infrastructure that will take us into the future," Boyd concludes.

Although not every business is as engaged in Web commerce as 1-800-Flowers and barnesandnoble. com, the same application services that make Windows NT Server ideal for Web business also make it effective for intranet and extranet applications.





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#### STICKING TO THE BASICS

Windows NT Server stays true to its core

hile it is the advanced features of Windows NT Server that grab attention, the multipurpose operating system continues to deliver efficient core networking services such as very fast and reliable file and print. The Windows NT Server file system (NTFS) is a highly scalable, easy to manage, secure file system for sharing files across an organization, regardless of the desktop system. Windows NT Server supports MS-DOS® and all 16-bit and 32-bit Windows-based clients, as well as Unix and Macintosh clients. It also works with other servers that may be on the network, such as NetWare and Unix.

Strong security is another core capability. "Windows NT Server offers the most robust and flexible security model of any general-purpose server or workstation operating system on the market today," asserts Microsoft's Nash. It includes such features as trusted-path logon and the Security Reference Monitor, which establishes a single place within the operating system for resource authorization services. This ensures that customers can lock-down their environment as they see fit.

Windows NT security, however, is flexible. Windows NT Server can be configured to favor user convenience over security, or to provide the high security that is often required by government agencies.

Windows NT Server also provides a core set of built-in services that form the foundation of basic management. Administrators can balance both centralized and decentralized control, ensure service availability and quality of service, and minimize cost of ownership. Windows 2000 Server will enhance

Adaptec's Ryan
Fernandes, network
operation manager,
says switching from
NetWare to Windows
NT Server resulted
in cost savings.

Windows NT Server's management capabilities with the Active Directory, allowing administrators to manage system resources more easily and efficiently. Those are precisely the features that have Adaptec pumped up about Windows 2000 Server. Until last year, Adaptec relied on Novell NetWare as its primary file and print server, as well as for database and application serving. Adaptec switched to Windows NT Server, however, and the result was a savings in costs, reports Adaptec's Fernandes. The company anticipates even greater savings to come with Windows 2000 Server, he notes.

← Continued from page 9

!DC states: "Windows NT is already a requirement for success among virtually all industry vendors." IDC projects Windows NT Server to surpass NetWare as the top installed server OS by 2000-

FOR MORE INFORMATION AND TO ORDER AN EVAL KIT, VISIT: WWW.MICROSOFT.COM/ NTSERVER/OPENHOUSE 2001. Looking ahead to clustered Intel servers, a new hierar-

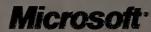
chical Windows 2000 Active Directory, and other advanced features in the Windows 2000 operating system, it will only get better.

The same will likely be said for midsize organizations. Windows NT Server gives midsize organizations what they need to compete in the information-driven environment of the 21st century: a flexible, efficient, and open computing infrastructure based on Windows.

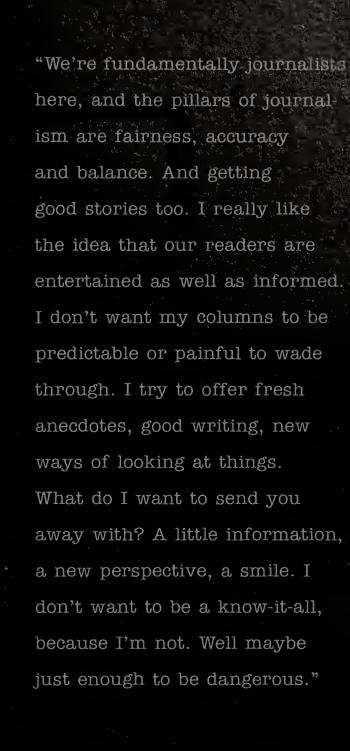
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# BUSINESS

#### A NEW PATH TO SUCCESS

Ambitious Young Turks often angle to move out of IT to climb the corporate ladder. But some business types are finding they ascend faster if they move between IT and business groups repeatedly. • 51

#### INTERNET Intransigence

At The Weather Channel, IT people resisted efforts to set up a Web site. Analysts say that's far from unusual. High hit rates overcome doubts, though. • 48

#### HEAD OFF HEADHUNTERS

It's almost impossible to prevent raids of your staff. But you can fix it so raiders take the ones you wish would leave anyway. If you make life a little harder for recruiters and a little better for your people, you'll be fine. • 54

#### LET THEM Entertain me

ConEdison found a quick and convenient way to train workers — using PCs connected to a virtual classroom. But the key to making it work is a teacher who can pull them all into a common experience, serving as tutor, producer and entertainer. > 46

#### SPENDTHRIFTS?

Observers are puzzled about why federal agen-

cies are spending millions more than they have to by hiring consultants to fix Y2K bugs that are less expensive to squash with in-house talent. Complex legacies plague some, but others make repairs on the cheap with no problem. •50

# SEX IN THE WORKPLACE

Gender equality in the workplace is a worthy goal, Kathleen Melymuka writes, but what happens when everyone pretends gender doesn't exist? Women deny characteristics that make them effective, and men feel constricted by political correctness. • 56

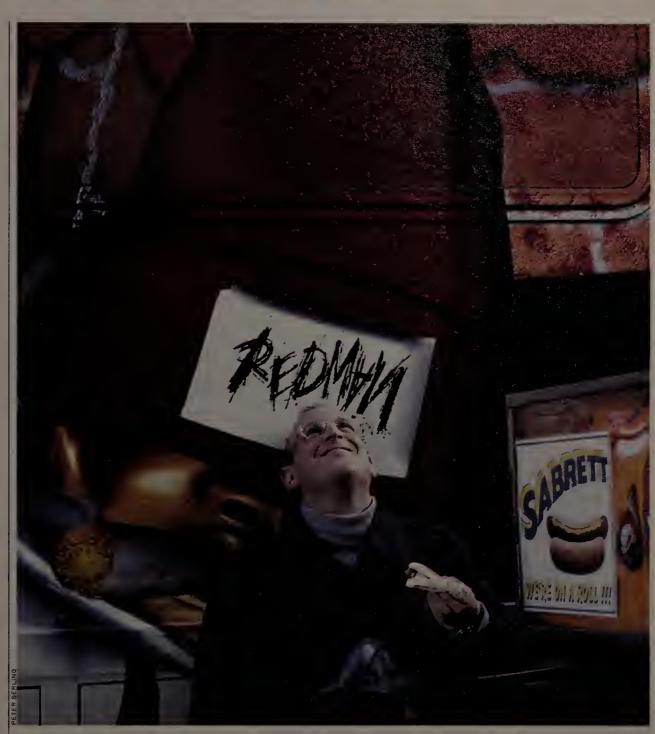
#### SEEING Y2K AS AN INVESTMENT

How can you use Y2K to make money? If you work in a mature market, you can use Y2K investments as you would any other investment in operational efficiency — and grab some market share before competitors catch up, Ed Yourdon writes. • 52

#### AIN'T BROKE? DON'T FIX IT

Cool Web technology tempts big companies that handle business-to-business transactions electronically, but many stick with good old electronic data interchange (EDI). They do shift EDI from leased lines to intranets, though. • 48.

#### 



# IT'S JUST LIKE HERDING CATS

IF YOU'RE ROLLING OUT a new customer-relationship management system, your biggest challenge is getting different user groups — salespeople and call center workers, for example — to fuse their various views of customers into a coherent picture. IT managers like Howard Koenig at ADP (above) say a coordinated response improves customer satisfaction and revenue, but

getting end users onboard is tricky.

# COST-SAVING NET POSES TEACHER CHALLENGE

Rare breed needed to run interactive course

BY JULIA KING LONG ISLAND CITY, N.Y.

ollowing a successful, yearlong pilot test, Consolidated Edison Company of New York Inc. is investing millions in a new, state-of-the-art interactive learning network designed to cut training costs by as much as 80%.

But first, the utility has to

find more rare individuals like Charlie Speed, who know all about occupational health and safety regulations; can simultaneously operate voice, data and video equipment; and have what it takes to hold the attention of dozens of mechanics, cable-layers and other tradesmen who attend Speed's online classes live via PCs as far as 35 miles away.

"We don't want a bunch of talking heads, and one of our biggest issues is transitioning our instructors to be producers as well as teachers," said John Torchia, director of Con Ed's Learning Center here.

Another issue involves retooling thousands of pages of documentation from more than 700 traditional, in-person training courses for live presentation over the new fiberoptic network. That means becoming an expert user of a

variety of system components, including videoconferencing, streaming video and inter-

active question-and-answer sessions from vendors like Intel Corp., One Touch Systems Inc. and GTE Internetworking.

Sitting at his console, with headset and microphone in place, Speed, a former meter reader, looks like the Wizard of Oz as he positions cameras, taps messages on a keyboard and queues up video clips — all the while talking and joking with students.

"To do this job, you've got to be a subject-matter expert, pseudoproducer and a little bit of an entertainer," said Speed, who in his off-hours operates his own recording studio and heads an association of singers and songwriters on Long Island. "You also have to learn to associate with your students, even though you can't see them. So you need to get an audio feel by constantly cycling through the classroom, asking people by name if they have questions.'

Meanwhile, students like Ron Michelino, a lead mechanic on a Brooklyn-based cable gang,

watch Speed on PCs equipped with real-time audio and video that let them interact with Speed back at his studio.

"It was kind of intimidating at first, but 10 or 15 minutes into the class, it was fine. You sort of get mesmerized, and you really concentrate on what you're doing," said Michelino,



TRAINER CHARLIE SPEED: "You've got to be a subject-matter expert, pseudoproducer and a little bit of an entertainer"

no prior PC experience.

a 28-year Con Ed worker with

For additional instructors, Con Ed and other companies should first look to help desk workers, said Elliott Masie, president of The Masie Center, a Saratoga Springs, N.Y.-based training consultancy.

"They're used to delivering verbal information without visual feedback and in a very concise fashion," Masie said. •

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## **Yale Hones Fund Drive With Reporting Tools**

Requests target alums based on gift patterns

BY STEWART DECK

If it were your job to raise money, it would seem that a top Ivy League university — with ranks of wealthy alumni — would be an easy place to do it. Not so, to hear from fundraisers at Yale University.

As in any sales job, you have to keep in close touch with major donors but not pester them.

You also have to find the proper way to approach new customers. But the balance is a little trickier than a straight sales job because the donors aren't receiving any goods for their money.

Yale stores gift-giving and other information about its alumni and donors in an Oracle8 database that is 2G bytes large and still growing. But with inadequate reporting tools, the 160 system users could pull up only a single name at a time and had to fill

get broad donor groupings. "Our staff needed to spend far less time filling out paper forms and more time communicating with constituents," said Marcia Schels, a senior information technology project manager at Yale's development office. So the school started looking at different types of reporting tools to give users better access to more data.

"We pull data from up to 20

out detailed request forms to

tables into one report and incorporate tons of business logic along with it," Schels explained. Reports sort donors according to geography, the type of projects to which they contribute and dozens of other factors that make them likely prospects for a particular fund drive. "We aren't just selecting data and plopping it down," Schels said.

After examining tools from Oracle Corp. and Seagate Software, Yale decided on Sqribe Enterprise Server from Sqribe Technologies in Redwood City, Calif., for its scripting language and ability to handle complex reports. Once Enterprise is fully in place, the development office will use it to develop reports and interactive analysis through a Web-based interface.

Sqribe's tools give users a broad reach into enterprise data, said Wayne Eckerson, vice president of technology services at the Data Warehousing Institute, a for-profit educational group in Gaithersburg,

# Databases to Coordinate DHL/Postal Service Delivery

BY STEWART DECK

The U.S. Postal Service has announced a partnership with DHL Airways Inc. that will let post office customers send two-day letters to Western Europe.

The program expands the reach of the Postal Service, while letting DHL gather new business using its extensive European delivery network and package-tracking system.

Called Priority Mail Global Guaranteed, the service will go live April 12.

Unlike private package carriers like Federal Express Corp. and United Parcel Service of America Inc., the Postal Ser-

vice hasn't been able to guarantee two-day delivery to Europe because it had to hand off letters to foreign postal administrations, said John Kelly, the Postal Service's vice president of expedited/package services.

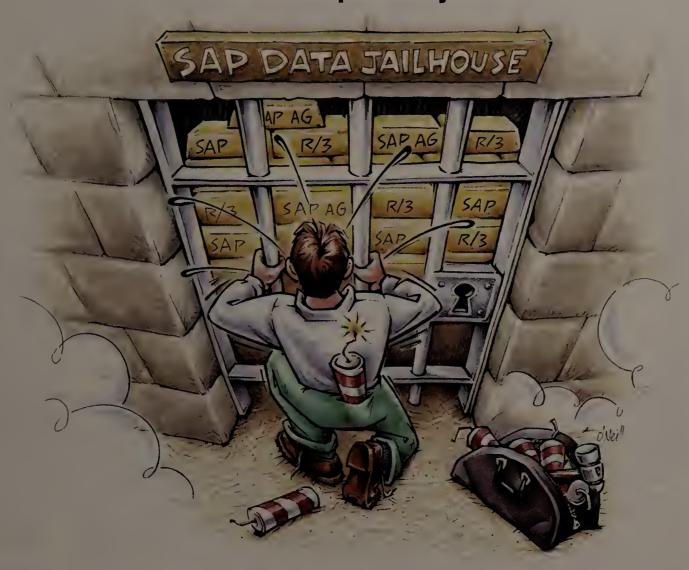
The Postal Service will scan packages into its package-tracking database and ship them to New York's JFK Airport. There, DHL will rescan the Postal Service bar codes and add bar codes suitable for its Easy Ship tracking system.

When DHL delivers the packages to Europe, the Easy Ship system will update the Postal Service database via electronic data interchange.



YALE'S MARCIA SCHELS: "Our staff needed to spend far less time filling out paper forms and more time communicating with constituents"

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# USERS CLING TO EDI FOR CRITICAL TRANSACTIONS

Some experimenting with Web forms, Net transmission, but full transition still far off

BY CAROL SLIWA

ARGE COMPANIES that have relied on electronic data interchange (EDI) for business transactions are now experimenting with Web-based forms to link them to smaller suppliers that have resisted setting up EDI systems.

But while they view the new technology as promising, they're still not abandoning traditional EDI systems when it comes to their most important business-to-business buying and selling transactions.

"Shifting from EDI to other technologies is not happening at all," said Steven Bell, an analyst at Forrester Research Inc. in Cambridge, Mass. Companies generally conclude that "it ain't broken; don't fix it," he said.

What Bell has seen happening, however, is that companies that have been using leased lines to transport EDI messages are switching to Internet- or extranet-based transport mechanisms. EDI messages are sent between companies via leased lines or through value-added networks (VAN) that typically provide other customer services such as setting up trading partners and translating data into an EDI format.

Companies using VANs probably won't start moving to Internet-based transport until

next year, Bell said. "Trying to move them to anything new is a gargantuan effort. Now IT is too busy with Y2K," he said.

Case Corp. isn't just sticking with a VAN; it's ramping up 400 new suppliers to do EDI transactions through its GE Information Services (GEIS) VAN. The Racine, Wis., agricultural and construction equipment maker finds the VAN-based approach more reliable for ensuring that purchase orders shoot directly into their suppliers' systems without human intervention, said Greg Modlinski, Case's electroniccommerce business lead.

But like many companies, Case also is setting up an extranet and looking into using electronic Web forms to bring in some of its smaller trading partners that have resisted EDI because of its expense and complexity. Caterpillar Inc. just brought 20 smaller suppliers online using GEIS's Web Access module but has no immediate plans to convert any of the 1,800 others it deals with using EDI. "It's for a small, niche audience" said Roger Proctor, a technical specialist at Caterpillar.

One drawback to Web-based electronic forms is that they now facilitate only person-to-computer transactions. But

EDI transactions typically run computer-to-computer, eliminating the possibility of errors.

"The Internet will be the future," said Holger Huels, chief financial officer at Boehringer Ingelheim Corp., a pharmaceuticals company in Ridgefield, Conn. Right now his company faces bigger concerns, Huels said, such as the year 2000 problem and the installation of a new enterprise resource planning system.

#### MOREONLINE

For online resources, publications, articles, FAQs and more on EDI and electronic commerce, visit our Web site.

www.computerworld.com/more

# Early Days Stormy at Weather.com

Internal resistance struck cable TV site

BY SHARON MACHLIS

It's a problem that many corporate Internet initiatives encounter but few executives

want to talk about: resistance within the company from organizations that feel threatened by the new endeavor.

At The Weather Channel, "We had to fight," said Mike Carey, senior vice president for new media, during a presentation at the Direct Marketing Asso-

ciation's Net.marketing conference in Los Angeles. "We got no cooperation from our technical people. I mean zip. They didn't even answer our ... calls."

**WEATHER CHAN-**

**NEL'S MIKE CAREY:** 

"They just hated us"

Meanwhile, people at the Atlanta-based cable TV channel didn't want to promote the Web site on the air, afraid that doing so would encourage viewers to use the Web instead of tuning in to the station. "For about a year, they just hated us," Carey said.

Internal conflict in such situations is common, said Barry Parr, an analyst at International Data Corp. in Mountain View, Calif. An effective way to counter resistance, he said, is to garner support at the top: Get the president or CEO to make it clear that the Internet is an important part of the business.

Carey's team responded by creating its own support. "We commandeered some technical people, hired others," he said. "We built this thing by hook and by crook. What turned it around? Volume. Numbers count." As traffic to the site soared and the group kept requesting new large, multiprocessor Sun Microsys-

tems Inc. servers every month, other executives took notice. "All of a sudden it was worthwhile," Carey said. The funding followed.

Today, the site (www.weather.com) is one of the Web's 20 most-visited. And the cable channel's viewership hasn't suffered. The Web

site's technology is being deployed elsewhere in the corporation, he said.

Other conference speakers acknowledged similar conflicts. "There's always going to be some resistance" to new Web activities because many people don't truly understand the medium, said Michele Bartram, chief of electronic marketing and development at the U.S. Mint in Washington. She said resistance eased at the mint after people learned more and other department representatives came onboard.

## New Intranet Helps Golfers Manage Careers – and Lives

20 PGA vets helped IBM develop system

#### BY THOMAS HOFFMAN

It's hard to feel much sympathy for professional golfers who earn millions of dollars playing the best courses at the most exotic places on earth.

But most players on the Professional Golfers Association (PGA) Tour spend more than half the year on the road, which makes it difficult for them to manage tournament registrations, transportation and finances.

A new intranet was designed to make life easier for the PGA's 204 touring pros by giving them a place to find schedules and player statistics and links to a

#### MOREONLINE

For intranet resources, visit our Web site. www.computerworld.com/more

players-only bulletin board.

The PGA Tour Links system was developed by IBM and the PGA with the help of 20 golfers on the tour.

The system, maintained and sponsored by IBM, took 10 months to develop and was rolled out in mid-January.

Lanny Wadkins, a 28-year tour veteran, uses it daily to track his stocks. "After a round,

I'll see how I did that day — and sometimes it's better than I did on the golf course," he said.

Phil Mickelson said he uses it to download information about the next course he's going to play. The system has fostered "interaction between the players through e-mail and the bulletin board," he said.

Future enhancements may include a balloting tool "so we can poll the players electronically on policy issues, player-of-the-year voting" and other matters, said Steve Evans, IS chief for the PGA Tour in Ponte Vedra, Fla.



PRO GOLFERS such as Davis Love III (above and at right in inset) use PGA Tour Links to register for tournaments and manage investments

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E-mail your resume to www.careeragent.com Remember to include the Reference Code: CW 9812



## FEDERAL AGENCIES OPT FOR MANUAL FIXES

Most units eschew filtering software, though one department uses it and saves

BY THOMAS HOFFMAN

Why would the government pay \$20 for a paper clip that it could buy for a penny?

The same question could be addressed to the many federal agencies that have opted for more time-consuming and expensive ways of renovating their software to work in year 2000 when cheaper alternatives are available.

In general, federal agencies are spending \$1.25 to \$1.50 to fix each line of code manually when they could probably renovate their systems for a fraction of that cost using automated software tools. The Bureau of Indian Affairs (BIA), for example, said it just fixed 1.58 million lines of Cobol code at a cost of 14 cents per line using software from Waltham, Mass.-based Data Dimensions Inc.

In light of the BIA's experience, it's puzzling why other agencies such as the Federal Aviation Administration and the Internal Revenue Service would spend tens of millions of dollars to pay external consultants such as IBM and Andersen Consulting to manually repair millions of lines of legacy software code that could presumably be fixed at a lower cost using automated tools.

Some industry experts chalk it up to politically motivated

contracts between federal agencies and big service firms that stand to profit more by fixing code on an hourly basis than by using a relatively cheap software filter to scan for hidden date fields and repair them.

Federal managers and industry experts offer other explanations. For starters, when millennium projects first began,

one of the 'good ole boy' firms" already on the list, said Howard Rubin, a research fellow at Meta Group Inc. in Stamford,

In addition, most federal agencies have long-standing contractual relationships with vendors "so the procurement process is easier" with them, Isfahani said. It's just easier to give them the work, even if it's more expensive, he explained.

Plus, year 2000 became more expensive for agencies that were dragging their feet getting started. A January re-

that were dragging their feet getting started. A January re-

THE FAA IS JUST ONE of the agencies spending tens of millions of dollars to pay external consultants to manually repair old software code

few of the niche tools providers such as Phoenix-based Viasoft Inc. were on the General Services Administration's list of approved vendors from which agencies could purchase equipment, noted Kazim Isfahani, an analyst at Giga Information Group Inc. in Cambridge, Mass.

To get on the list, the tools vendors "have to partner with

port from the U.S. General Accounting Office stated that as federal agencies "more fully realized the complexities and extent" of year 2000 work, costs for the government's 24 major departments tripled between February 1997 and November 1998.

"We were lucky that we didn't have to hire an army of programmers" to work on the year 2000 bug, said a spokesman for the FAA in Washington, who explained that the agency already had a team of in-house and contract programmers maintaining its systems.

But that doesn't explain why each of the FAA's 14 year 2000 contractors, including Fairfax, Va.-based James Martin & Co., snubbed an opportunity to participate in a free pilot program and sample Waltham, Mass.-based Data Integrity Inc.'s Millennium Solutions renovation tool.

#### Too Good to Be True?

Data Integrity's tool helped the BIA save six months of labor and more than \$2 million, according to Mona Infield, branch chief for application support at the BIA in Albuquerque, N.M. That works out to roughly 14 cents per line of code, including \$80,000 in labor costs and \$200,000 for the tool, she said.

Isfahani said he was "suspicious" about how inexpensive BIA's remediation costs were. "I've heard these pitches [of] a nickel a line for a million lines of code before, and it just sounds too good to be true," he said.

"I think it's a question of timing — a lot of these tools weren't available until recently," said Kathy Adams, year 2000 program director at the Social Security Administration, which is one of the few agencies praised by the GAO for its progress.

She warned that line-of-code cost estimates are deceiving because they reflect only inhouse software that's been repaired, excluding upgrades and revisions required for third-party commercial software packages.

"There's so much variation

with those costs, because if you have an in-house staff that knows the code and can fix it, those costs will be a lot lower than contracting it out," Adams said

As for the FAA's reason for turning down automation tools, "it's a mystery to us," said Allen Burgess, president and CEO of Data Integrity.

"There's no simple answer to how we renovated the code," said an FAA spokesman.

Other federal managers said their remediation strategies are based on unique processing and business requirements. The Health Care Financing Administration (HCFA) in Baltimore, for example, had to fix a managed care system that contained 1 million lines of Model 204 code, an "old IBM relational database you can't just go out and buy [remediation] tools for," said CIO Gary Christoph.

HCFA has used year 2000 tools from vendors such as Columbia, Md.-based McCabe & Associates Inc. and AverStar Inc. in Burlington, Mass. But Christoph said he "would be very suspect of a tools-only approach" that didn't include technicians manually reviewing 30-year-old programs with date fields that were named after former girlfriends.

There are a fair number of federal agencies that have programs written in obscure languages such as Mumps and Algol. In those situations, the code has to be manually remediated because there are few tools available for those technologies.

"It's the difference between a surgeon and a butcher using a scalpel," Christoph said. "If you don't understand what the tool can do, you can [inflict] a lot of damage."

## **BRIEFS**

#### **Noncompliant Prods**

Manufacturers are still discovering year 2000 problems with software and hardware products, Infoliant Corp. in Pittsburgh said last week. The company publishes the *Delta Report*, which revealed there were 1,500 changes in compliance status by manufacturers between November and January, which could mean

a product once believed compliant is noncompliant or needs work.

#### Chemical Maker Is Y2K Ready

BASF Canada, the Toronto-based arm of German chemicals giant BASF AG, said it has attained year 2000-readiness for its logistics and financial systems. With the help of Toronto consultant Fioravanti-Redwood International, BASF Canada fixed 5 million lines of code written

in Speedware, Cobol, Business Basic and Powerhouse during an eight-month remediation project.

#### Contingency Planning Tool for Year 2000

Market Partners Inc. in King of Prussia, Pa., has introduced Contingency Express, a software tool aimed at helping financial institutions develop year 2000 contingency plans. The package is priced at \$295

# COLUMBIA/HCA UNITED HEALTH CARE Fortune 500 rank\* Spending through Sept. 30, 1998 Estimate of total year 2000 cost SOME COLUMBIA/HCA HEALTH CARE FORTUNE 500 rank\* SPENDING SEPTIMES SEEM SPENDING SEPTIMES SEPTI

SOURCE: FORM 10-Q FILINGS (NOVEMBER 1998) WITH SECURITIES AND EXCHANGE COMMISSION

## BUSINESS



# In & Out of IT

Ken Anderson is a bit of an oddity in corporate America. In the past 13 years, he's moved between business operations and IT *five times*.

A history like that just might make Anderson eligible for inclusion in some sort of IT record book. But he'd be a rarity even if he made the move from business into IT only once. After all, that particular migration path remains lightly traveled. At most companies, the road to advancement still leads toward the business unit By Rochelle Garner

O WHY DOES Anderson continually bounce back to IT? "I have a thing for information technology," says Anderson, vice president of supply chain systems at Office Depot Inc. in Delray Beach, Fla. "Besides, I've never worked at a company where IT wasn't respected. My moves have never been viewed as detrimental to my career."

And there's the crux of it: respect for the IT organization. Few businesspeople, after all, want to exile themselves to a corporate backwater. That fact alone tends to restrict this sort of career transition to those companies that view IT and business as equal partners.

That's certainly the case at Office Depot, with its all-out effort to use the Internet for competitive advantage. It's also true at Federal Express Corp. in Memphis, Elf Atochem North America Inc. in Philadelphia and United Parcel Service of America Inc. in Atlanta. All

of these companies view IT as integral to their well-being.

But that doesn't mean people from the two sides of the house view the world the same way or readily accept the new transplant.

"Coming into IT was like entering a foreign country," says Rick Nordtvedt, managing director of strategic sales systems at FedEx. Nordtvedt had been the technology guru in FedEx's ground operations division, but he quickly found he didn't know jack about what was under the covers.

#### Out of IT

"Oddly enough, I believe I became a better manager because I had to rely very heavily on the people who reported to me," Nordtvedt says. "Every good leader is taught to ask the opinion of the people who work for you. I had no choice; I asked for their input on everything."

It's no surprise that because of the 10 | Carlos, Calif.

years he's worked in IT, Nordtvcdt has a deeper knowledge of technology.

But that isn't his real value to the organization. It's his insight into the company, having worked for 13 years with FcdEx's vans, airplanes and couriers.

"We had a senior IT person who was determined to gather all of the data he needed to answer a high-level question our [chief operating officer] posed on our airline efficiency," Nordtvedt says. "Our IT person — who was extremely senior — wanted to create a database system to capture the information. Because I'd worked in the field organization, I knew that having to enter all of that data would have made it impossi-

ble for people to do their jobs. I pointed out that his system would delay 90% of the flights, which probably was not what the COO had in mind."

#### On Top of IT

"Moving back and forth has made it a whole lot easier to do this job," Anderson agrees. "I have a deep comprehension of where the risks are, regardless of whether they're associated with IT or with marketing."

In fact, everyone interviewed for this article spoke about how their business acumen sharpened their management skills.

Their point: Business knowledge enhances their ability to manage technology. It's a theme echoed by everyone interviewed.

But people also spoke of something else.

"It's the acceptance factor — wondering what this bean counter knows about computers," says Ken Lacy, who moved from corporate comptroller at UPS to the No. 2 spot in IT and, ultimately, became CIO. "At first, it was a testing environment," Lacy says candidly. "The more I learned, the less they questioned me."

Think about that for a moment. Here's the CIO of a company known for spending \$1 billion per year on technology, and he still got the wary eye from his organization.

"It takes time for the comfort factor to settle in," agrees Larry Hartman, who moved from director of customer service at Elf Atochem to director of business management for operations support. "It's not like being viewed as from the other camp so much as seeing you as someone who doesn't have the full grasp of what IT is doing."

Oh, don't get the impression that these business folks were treated badly by their new IT colleagues. They say they weren't.

Still, if IT organizations are ever to become a step up the corporate ladder, they will have to become a bit more open to their less-technical peers.

Garner is a freelance writer in San Carlos, Calif.

#### Part of the Team?



I've never worked at a company where IT wasn't respected.

KEN ANDERSON, OFFICE DEPOT



It takes time for the comfort factor [for accepting IT] to settle in.

LARRY HARTMAN,
ELF ATOCHEM NORTH AMERICA



It was a testing environment. The more I learned, the less they questioned me.

KEN LACY, UPS



Every good leader is taught to ask the opinion of the people who work for you.

RICK NORDTVEDT, FEDERAL EXPRESS

## **NEW REPORTS**

#### **Process-Specific Apps Hard to Find**

A new study reports that although manufacturers want to abandon homegrown process-specific applications, they still have trouble finding adequate replacements from outside

"The Process of Process: **Enterprise Business Applica**tions in the Process Manufacturing Industries," a 90-page report from Aberdeen Group Inc. in Boston, covers the trends in process-manufacturing industries and the information technology needs of process manufacturing and leading application suppliers.

The report costs \$895. www.aberdeen.com

#### E-Brokers Rated

In a report from Forrester Research Inc. called "Investors Grade eBrokers," online investors rank brokers in areas such as advice, site performance and site design.

According to the Cambridge, Mass., company's report, Datek Online Brokerage Services Corp. and Suretrade Inc. top the low-fee, high-performance niche, and Charles Schwab & Co. is the leading choice for the advice-

#### II by industry Breakdown of U.S. IT spending for 2000:

Financial \$55 FB services **Process** manufacturing Discrete \$30.1B

Retail \$32.08 distribution

Wholesale \$16.9B distribution Health

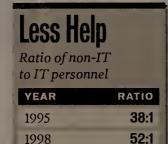
\$19.8B

\$17.7B \$10.5B

Federal government State and local governments

manufacturing

conscious. Forrester said about 2.5 million North American households invest online. www.forrester.com



SOURCE: CUTTER INFORMATION CORP ARLINGTON, MASS.

#### **Supply-Chain Rebound Expected**

Although the supply-chain management market is slowing down, it's expected to grow 50% this year, according to a report from AMR Research Inc. in Boston.

The relatively flat supplychain management market will improve later this year as year 2000 projects wind down and vendors expand supply-chain offerings. The \$4.5 billion 1999 market will include a supply-chain planning segment that will increase by 58% and a supply-chain execution segment that will increase by 42%. www.amrresearch.com

#### **Now You Can Buy** WSJ by the Day

The Wall Street Journal Interactive Edition has oneday passes to its subscription site for \$1.95 (the pass is valid for two days until May 31). The Journal is using a content-purchasing network by Qpass Inc. in Seattle to offer the service.

Also selling content on the **Qpass site: Internet economy** publication The Industry Standard in San Francisco; Morningstar Inc. in Chicago, a publisher of mutual-fund data; and the U.S. Department of Commerce.

ED YOURDON

# Getting a Y2K edge on the competition

AIRLY OR UNFAIRLY, IT departments have been blamed for causing the year 2000 problem and then told by senior management, "Fix the problem and clean up the mess you made." Such an attitude often means IT has to fight for every penny it needs for its year 2000 activities. Even if IT bears the brunt of whatever belt-tightening is required to fund the internal system repairs, it isn't fair to expect IT to bear the entire

burden of helping business departments throughout the company cope with the year 2000 problems of their trading partners.

The situation often degenerates into a question of who will get stuck with an onerous task. Meanwhile, hardly anyone has bothered to talk to the marketing or public relations departments about the advantages a successful year

2000 effort might bring. That's particularly true in mature industries - such as banking, automobiles and food service, where there's relatively little "natural" growth — as opposed to newtechnology industries that haven't yet saturated their respective markets.

Consider the typical growth strategy in a mature industry: It consists of grabbing market share from competitors through tactics such as massive advertising, price cuts, better quality and better service. If an extra 1% of market share translates into \$10 million in annual revenue and \$1 million in net profit, it's worth investing, say, \$500,000 in marketing to gain that 1%.

How does that translate into competitive advantage? Suppose you're one of three major competitors in the widget industry. All three companies are in about the same state of year 2000

readiness. Now suppose your company invests an extra \$500,000 to ensure that its key suppliers will be year 2000-compliant, while your competitors rely on the "don't-worry, we'reworking-on-it" letters from vendors. In the bestcase scenario, come Jan. I, everything will be working smoothly for you, while your competitors' business will be disrupted or not operating. Their loss will be your gain.

To succeed with that strategy, you must have your own computer systems under control and

must exert sufficient control over your trading partners to ensure their success. That may be practical with small vendors you can harass or with large vendors you can work with and trust, but not necessarily with your utility company, your bank or your telecommunications vendor. But an investment of funds can create a competitive advantage: The company with a backup

> generator, redundant telecommunications vendors and a contingency plan to cope with banking disruptions will have an advantage over the company that has none.

> What makes that perspective interesting is that it creates the opportunity for funding outside the IT department and the normal year-2000 project budget. As long as year 2000 is seen as an expensive nuisance caused by, and funded by, IT, other political forces within the organization will be looking for opportunities to cut the budget. But if you can convince the marketing department that a scenario such as the one described above is plausible, then it should be funding the \$500,000 to ensure that the company's business partners are truly year 2000-compliant.

Marketing might also create an advertising campaign to exploit the disruptions suffered by competitors, just as CompuServe did during America Online's recent

massive system overloads a couple of years ago. Sadly, most organizations don't see things that way; they continue to see year 2000 as nothing more than a nuisance created by their IT departments. But if your competitors have that mind-set, it creates an opportunity to get someone in senior management to see the light.

Investment

of funds

can create

a competitive

advantage.

Yourdon heads the year 2000 service at Cutter Consortium in Arlington, Mass. His Internet address is ed@yourdon.com.

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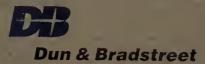
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How to Flip Out a Web Flipper (and Other Anti-Poacher Tactics) By Mary Brandel

# HEADING OFF EADHUNTERS

way the phones ring from one cubicle to the next. When employees pick up the phone, their usual tone of voice subtly changes.

It's an old trick of the recruiter trade: Establish one IT worker's phone extension and then change the numbers sequen-

tially to get neighboring peers: 801, 802, 803, for example.

Not exactly rocket science. But Farrar, who's president of IT consulting firm Metamor Technologies Inc. in Chicago, has decided not to jumble up his company's phone extensions. The way Farrar sees it, recruiters will find their way in, someday, somewhere, somehow.

Instead, the company employs as its best offense a good defense.

"You're better off making the work environment so attractive that people who get trimmed are the ones who were going to get trimmed anyway," Farrar says.

So, in addition to offering competitive compensation, Metamor tries to offer a fun and casual work environment. "We have pinball machines, pool tables and even a 'payroll goddess,' who brings around the checks in costume," Farrar says.

With the information technology skills shortage at a record high, retention has become Job 1 for IT managers. And nearly everyone agrees that happy employees are the best defense against aggressive recruiters.

"It's very difficult to defend yourself from people being contacted," says David Dell, research director at The Concours Group, a consulting firm in Kingwood, Texas. "Once recruiters find one person who leaves, they've got word-of-mouth access to other people inside that company. It's much better to make sure the organization is the type of place people don't want to leave."

But what about lining up a good offense, too? In case you haven't noticed, IT recruiting has taken on the fervor of extreme sports. Particularly with the Internet, recruiters are finding unforeseen—and sometimes ethically questionable—ways to infiltrate corporate ranks.

"The gloves are off," says Chris Velissaris, a technical recruiting consultant at VIE Inc. in Chicago. "Recruiters are saying, 'I need people, and by any means necessary that's legal, I'm going to find them.'"

So, how can you make the recruiters' job just a little bit more difficult? "There are all kinds of ways employers can smarten up," says Fran Quittel, a San Francisco expert in high-tech careers and recruitment (and *Computerworld*'s Career Adviser columnist).

For starters, she says, "Don't put all your employees' names on any Web site, and don't have a phone system you can tap in to at night to get a complete directory listing."

To recruiters, voice mail can be either a gold mine or their worst enemy. "If you don't have a specific name, you often can't get through," says Lina Fafard, a branch manager at Montgomery West, an executive search firm in Torrance, Calif. "Then, if you call the receptionist and ask for the director of the DB2 group, they'll say you need the name or we can't put you through."

Of course, there are ways around that, such as good old technical support.

"They're usually pretty free about giving out information," Fafard says.

On the other hand, voice-mail systems can yield lots of valuable information. "[Recruiters] can call after-hours and listen to voice mail, which gives the person's name," Farrar says. "Then, during regular business hours they call back and say, 'Hi, John Smith, we've heard a lot about you.' That's a cool thing if you're 23 years old."

#### On the Internet

But the new weapon of choice is the Internet. In fact, the best way to make your employees harder to find is to learn about the latest Internet recruiting techniques.

"I would focus on how employees are making themselves visible on the Net and how you can limit that," says Tracey Claybrooke, president of Claybrooke & Associates Inc., an Internet recruitment consulting firm in Tampa, Fla. Claybrooke also advises corporations on how to protect their Web sites from recruiters.

One suggestion is to attend a recruitment sourcing seminar, such as those held by Intelligent Search Technology Ltd. "I wouldn't send a recruiter, I'd send a security person," Quittel says.

At those seminars, you'll learn about Web flipping, newsgroup mining and sophisticated search techniques.

With Web flipping, recruiters use a search engine like AltaVista to find all the links associated with an employer's Web site.

"You say, 'Give me all the Web sites that are linked to Oracle.com.' Hopefully what you'll find are user groups, fan clubs of Oracle, private Web pages of people who work with Oracle, lists of all their friends who are Oracle programmers and home pages for all of them,"



# ARE YOU AT RISK FOR RAIDING?

#### WHAT, ME WORRY?

Despite the record tight IT labor and skills market, Computerworld's 1999 Annual Hiring Forecast revealed that only half of IT managers say they're worried about external recruiters or placement agencies raiding their staff:

#### WHAT'S A BOSS TO DO?

To fight off corporate raiding, IT managers say they're investing most in the following defensive strategies:

- Increasing training
- Increasing or reviewing salaries
- Providing aggressive bonus
- Allowing job/schedule flexibility

SOURCE: COMPUTERWORLD'S ANNUAL HIRING FORECAST, JAN. 4, 1999

#### SHOW ME THE MONEY

Why do IT pros jump ship? Money is the No. 1 reason, say IT managers in our Annual Hiring Forecast. Other top jobhopping reasons: advancement opportunities, 73%; future direction of organization, 37%; corporate culture/ environment, 37%; access to technology,

says Carl Kutsmode, president of Tiburon Group, a recruitment firm in Chicago. "You might even get into a hidden Web page that has the entire employee directory because the programmer didn't bother to program that to be part of the overall security."

To foil Web flippers, companies should ask employees with personal Web pages not to link back to the corporate site, Claybrooke says. "It should be company policy, with someone responsible for checking whether people

Similarly, recruiters are taught how to mine newsgroups to find specific names of employees at target companies. They just log in to a newsgroup and do a company domain search, which pulls together a quick list of every contributor from the target com-

To avoid exposure, ask your employees who participate in newsgroups to use Web-based e-mail so recruiters can't identify which company they work for, Claybrooke suggests.

That tactic will only go so far, however. Recruiters like Kutsmode hang out in newsgroups merely to network. "We'll look at people who are frequently responding and send them an e-mail saying, 'We monitor this newsgroup, and you seem to be an expert. Perhaps you could suggest other newsgroups to talk to people like yourself. And by the way, here's an opportunity, if you'd like to pass it along to friend."

Kutsmode does the same with authors of articles and white papers published on the Web.

"We search for articles written by people with specific titles," he says. 'We've been very successful developing ongoing referral relationships that

#### **Low-Tech Methods**

Of course, not all recruiting techniques are so high-tech. For example, did you know there's a black market for company phone directories? Fafard says street prices range from \$50 to \$100 a pop. You could keep a tighter rein on those directories, but a good severance policy might do the trick.

"I've had directories mailed to me anonymously because the employee was mad at the company for not giving them something or maybe they got laid off," Fafard says.

And there are some very simple measures you can take. For example, Metamor doesn't post its organizational chart online, because it would quickly reveal which employees have which skills. The company also doesn't post employee names on its Web sites, just sales representatives.

"Just put a 'Contact us' with one name," Claybrooke says. And if your site publishes white papers written by employees, don't put the specific author's name on it, she adds.

Another suggestion is to be courteous when recruiters make their sales calls. "If you hang up on a recruiter, forget it," Fafard says. "These days, you're either a client or a recruit-from."

Certainly there are recruitment tactics you can't do anything about. "It's like trying to stop the ocean," Quittel says. "For instance, I stand next to you at a conference, and you have a badge on, and I look you up in Big Yellow. Some of it is totally serendipitous."

#### Sleeping With the Enemy?

And you don't always know who the enemy is. "What I find offensive is the recruiter who wants to do business with us, and then they start stealing our employees," says Diane Thom, human resources manager for the department of information services at Comerica Inc. in Auburn Hills, Mich. "They're feeding us with candidates while they're wooing our employees away."

Just the same, Thom is a true noninterventionist. For example, Comerica keeps its phone list online. "We have it

[on Lotus Notes] and want it to be that way," she says. "I don't think you can ever make your people invisible. We concentrate on making it so comfortable for them to be here that they may listen and hear what's going on, but we're coming out in the long run."

Because certainly, offensive strategies can backfire. Take the policy of not giving out employee names over the phone. "I was called by a sales rep, and he garbled his last name," Kutsmode says. "When I called back and asked to speak with 'Steve,' the receptionist wouldn't connect me. Here he was, trying to sell me something - I wasn't even calling to recruit him."

Similarly, some companies create nonintuitive e-mail addresses so their employees are more difficult to reach. "But we don't think it's worth making people's e-mail addresses look silly," Farrar says. You also risk sending employees the wrong message.

"If you do things that say to the cmployee, 'they're trying to keep me off the market,' they're more likely to go see what they're worth," he adds.

The consensus among employers is that if recruiters work hard enough, they'll find your employees, perhaps your best ones.

But by creating a great defense and by taking a few offensive measures, you can at least feel satisfied you haven't given them the keys to the eastle.

"It's really important to take care of your employees and make sure that if you put them in a room full of recruiters, they'd say, 'I love my job,' " Fafard says. "If not, you deserve to be raided."

Brandel is a freelance writer and editor in Norfolk, Mass. She can be reached at - Mary Brandel | brandel@cwix.com.

#### THE TABLES TURNED: GETTING NOTICED BY RECRUITERS

So, as a skilled and in-demand IT professional, you find that you do want to be noticed by a recruiter. No problem. Even if your boss has gone into defensive mode, it isn't that hard to draw attention to yourself, particularly with the Internet. Here are some tips for getting the exposure you crave:

- Write white papers or other relevant articles, include your byline, and publish them on the
- Join and contribute to newsgroups.
- Put your résumé on one of the hot job sites. Those abuzz currently: Monster Board,
- Career Mosaic and the Online Career Center.
- Create your own Web page and include links to other sites where your peers hang out.
- Join professional groups and see if they have career centers with Web sites that list members; begin corresponding.
- Tell your friends to mention your name the next time they get a phone call from a head-
- Find out whether your alma mater has a Web site just for alumni and post your résumé and other job-related information there.

MS. MIS/KATHLEEN MELYMUKA

# Both sexes suffer in genderless IT

HAT DO YOU LEAVE at the door when you go to work? That's the question I and other participants had been asked to ponder during a session on work and life at a recent conference for women in technology. The first few responses were ho-hum: Roles as mothers, daughters and wives got jettisoned right off the bat. But it started getting interesting when

one woman said she left her right brain at the door: "I'm not paid to be intuitive; I'm paid to be logical," she said. Then, one of the youngest women in the room came right out and said it: "I leave my gender at the door.

The people I work with don't look at me as a woman," she explained. "They look at me as a genderless person, and I don't like that.'

She said she wanted the people in her office, most of whom are men, to look at her as a woman — to respond to her as a whole person and not just a technology-specialist position description.

A minute later, the only man in the room surprised everyone. "I leave my heart at the door," he said.

#### From the Heart

He recounted how sometimes at work a young woman will remind him of his daughter, or an older woman will remind him of his mother, and he wants to relate to them that way and talk from the heart

like a dad to a daughter or a son to a mom — maybe even give them a hug. "But I can't respond to them that way," he said, because it wouldn't be politically correct. He said he feels he's not supposed to think of them as women.

The implication was clear: We've spent the past 20 years trying to establish a sex-blind information technology workplace, only to discover that what we've created is a sometimes-pinching, heart-wringing, life-denying monstrosity.

And women aren't the only victims: A genderless IT environment is every bit as debilitating to men.

Later, I talked with two women who have written extensively about this kind of stuff. Judy B. Rosener is a professor at the Graduate School of Management at the University of California at Irvine and author of America's Competitive Secret: Utilizing Women as a Management Strategy (Oxford University Press Inc.,

Janet C. Wylie is presidentelect of Women in Technology, (www.womenintechnology .com), a women's advocacy group; president and CEO of HCL James Martin Inc., an IT consulting firm in Fairfax, Va.; and author of Chances and Choices: How Women Succeed in Today's Knowledge-based Businesses (EBW Press, 1996).

#### Their Own Choice

Rosener and Wylie said being "genderless" is seldom forced on women; it's usually a choice they make, although not necessarily consciously.

"The women themselves determine how they're viewed," Rosener explained. "That young woman sounds like she's been giving a message: Don't look at me as a woman."

Wylie explained that in IT, most women's role models have been men. As a result, "They sometimes don't know what to do with their own femininity, and they assume wrongly — that they have to leave [their] gender at the door."

This sets in motion what she calls a "do-loop" of confusion

and political cor-

"Men don't know how to treat women who are afraid to be women," she said.

Wylie acknowledged that she fell into this trap herself years ago. "I used to go through unbelievable gyrations not to call attention to the fact I was a woman," she said.

kathleen\_melymuka@ computerworld.com. But the result of that behavior is that everyone loses, including the business. By denying their femaleness, women inhibit the very characteristics that make them natural leaders: the ability to listen, to empathize and to do many things at once and the facility for developing personal relationships with co-

"These are things that really matter," Wylie said, "especially in businesses where your assets are people."

When IT women deny their identity and men walk around on eggshells, IT teams can look like dysfunctional families, projects miss the diversity of viewpoint that breeds out-ofthe-box thinking, and customer service can seem more in-your-face than caring.

#### Figured It Out

KATHLEEN MELYMUKA IS

Computerworld's senior

editor, management.

Contact her at

Wylie said it took her years, but she finally figured out that leaving her gender at the door meant leaving behind a lot of richness and experience.

"I'm really a good woman,"

she said, "but I'm not a good man.

"I finally found out that the more I was myself, the manager and leader I was, the more comfortable I was with myself and the more comfortable everyone is with me," she said.

The first step in this transformation is to lighten up. "I will make a

self-deprecating remark to show I'm not real sensitive," she said. "Humor is a great icebreaker."

Women can't leave their gender at the door any more than men can leave their hormones at the door, Rosener said. "The question is, what do you do with it?"

The answer? "You say, 'I am who I am: I'm female, and I'm competent, and I'm not going to pretend that I'm not either one." D

## **Women Showing Steady Growth on Several IT Fronts**

The hiring outlook will be skewed in favor of women in the future, especially in technology jobs, according to John Challenger, CEO of Challenger, Gray & Christmas Inc., a Chicago-based recruiting firm.

Women can expect to see the greatest gains in high-growth jobs such as database administrator, computer support specialist and

computer engineer, all of which are projected to more than double by 2006. The firm bases its predictions on anecdotal evidence and the fact that women have been pulling ahead of men in education, holding 54% of bachelor's degrees among 20- to 29-year-olds, according to the U.S. Bureau of the Census.

And that gap may be widening: Among 1997 high school graduates, 70% of women went on to college compared with only 64% of men.

Although recent reports show women avoiding computer science courses in droves, Challenger said course selection is less important than a comfort level with technology and a degree. "We're not just talking about math and engineering," he said. "Jobs like Web site managers and animation engineers combine various disciplines like graphic design and the ability to write well. It's comfort with technology and the ability to use and adapt to the technical demands that's the key, and we're seeing more women take advantage of the incredible demand out there."

#### **Project Management**

Women seem to be edging up in

the key field of IT project management, where technical expertise is less important than managerial acu-

ABT Corp., a New York software firm that sponsors a major project management conference annually. said the percentage of conference attendees who are women has increased steadily, from 37.9% in 1996 to 40.5% in 1997 and 43.6% last year.

Women also are warming up to the Web. Although outnumbered 2-to-1 by men in 1996, female Web users are expected to constitute 48% of the online population by next year, according to the Internet

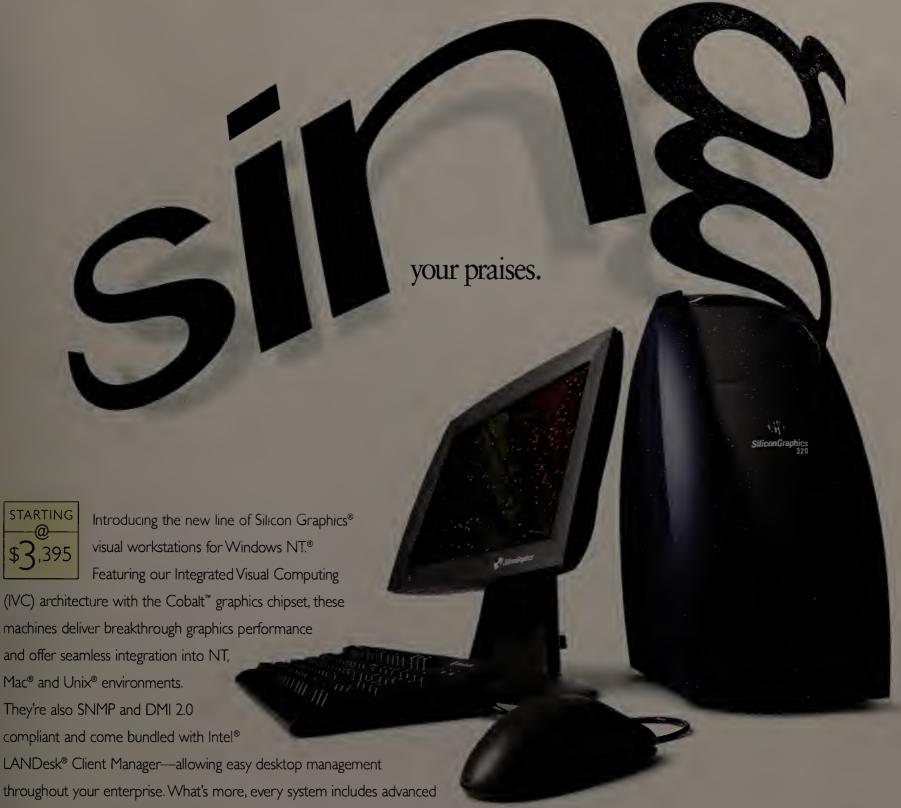
- Compiled by Kathleen Melymuka | SOURCE CREATIVE NETWORKS IN

#### **SNAPSHOT** Year 2000 Woes

How serious will the year 2000 problem be to the following systems in your organization? (I = no problem, 5 = serious problem)

STSTEM	SCORE
Desktop applications	2.9
Messaging systems	2.6
Calendaring/ scheduling systems	2.5
Desktop/server hardw	are 2.4
Web browsers, other Internet tools	2.2
Base: Executives at 39 Fortune 50	0 companies

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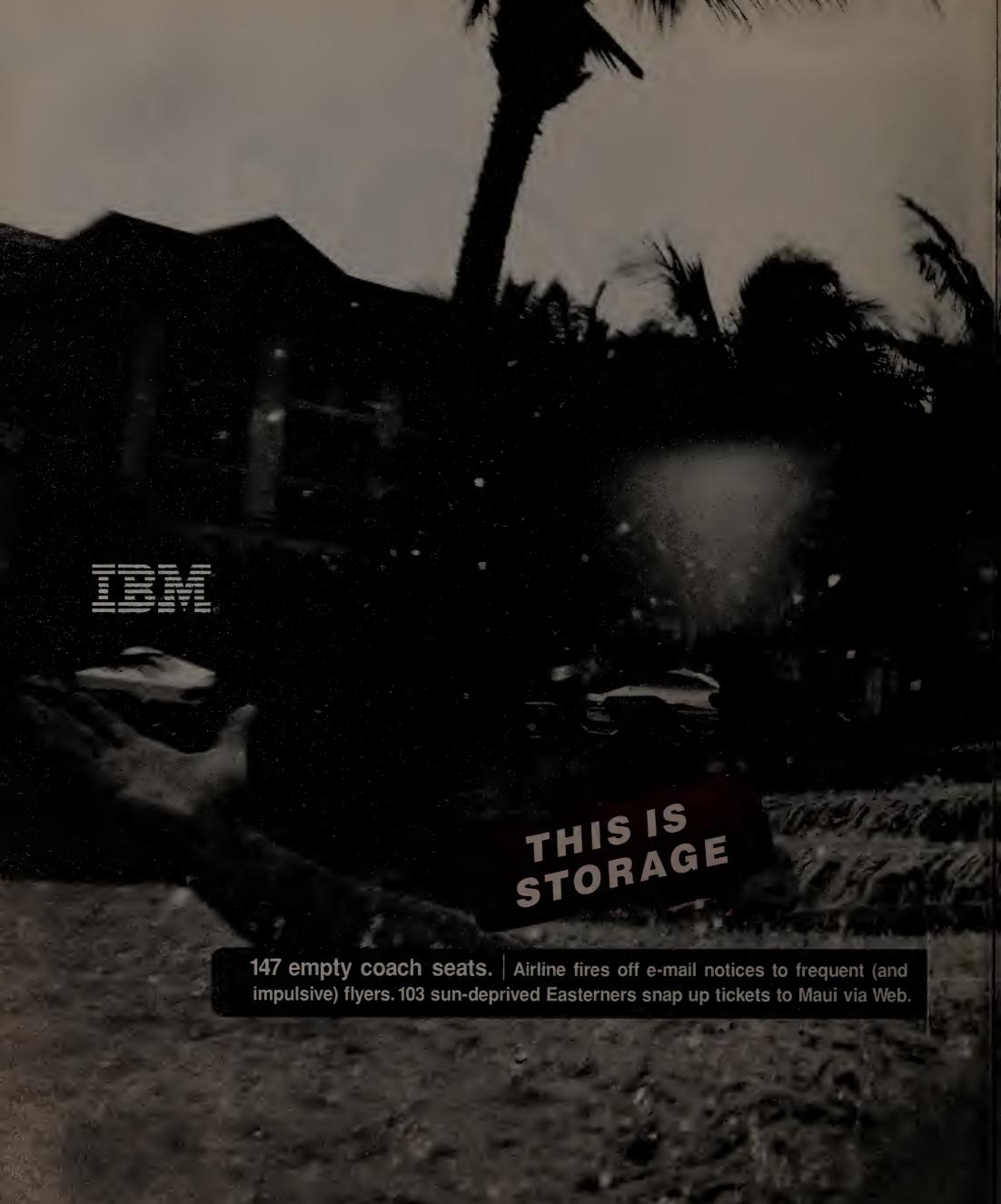
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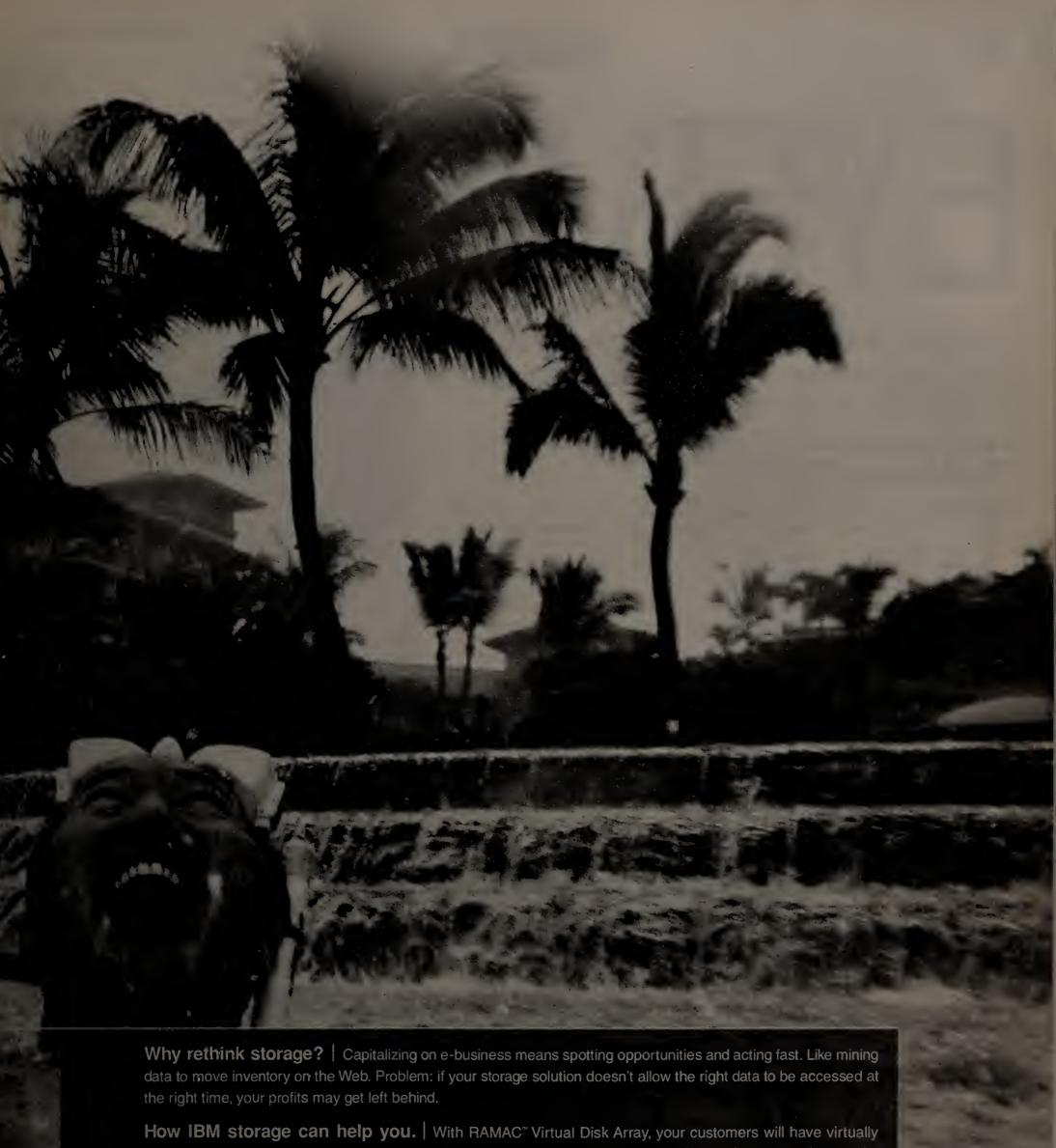
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e-business tools

Getting different kinds of users to play on the same field is the biggest challenge in rolling out customer relationship management systems By Alice LaPlante

OR 15 YEARS, Kevin Morey has taken his cues from little slips of paper. Morey is an appliance repairman working in the field, directed from job to job by dispatch orders that contain minimal data about each customer's problem.

"The lack of accurate information is the single biggest source of frustration for field technicians," he says. "Sometimes you don't even have the right address. It makes your job a lot harder."

Sounds like a problem wellsuited to an information technology solution. But Morey also knows how resistant to change people can be — especially individuals like himself, who are used to working with minimal supervision and loosely enforced rules.

"People develop their own ways of working out in the field. They don't necessarily understand why they have to change," Morey says. Yet his job involves introducing a huge change to his former coworkers. Morey is part of a cross-functional team implementing a new Vantive Corp. customer relationship management (CRM) system being rolled out by his employer, Chicago-based Appliance & Electronics Signature Service (AESS). The system will give the appliance-repair giant a single, comprehensive view of all customer relationships.

Forget notions of traditional

CRM systems like the one | AESS is implementing use a more holistic approach. CRM systems incorporate features found in contact management, sales automation, call center management software and more. Specifically, CRM provides a comprehensive view of the relationship between a business and its customer.

For example, at Everen Securities Inc., a Chicago-based investment firm serving institutional clients, an account can involve many different professionals. For instance, Everen sales representatives are responsible for selling financial products and services to the client's portfolio managers. Research analysts are charged with keeping an eye on that client's senior executives to track stock performance. Securities traders check in with industry sources who happen to work for the client.

What's tricky — whether you sell securities or fix washing machines — is that so many employees need to cooperate to provide a service.

There are call center workers who write down customer orders, directions or complaints. Then there are salespeople in the field with an eye on commissions, heads-down telemarketers responsible for contacting a certain number of prospects per hour and customer-service troubleshooters who are on the firing line when any link in that chain breaks.

There are four components to a successful CRM installation — and technology is field or sales force automation. the least of them, says Mike

Levinger, senior vice president of Technology Solutions Co., a Chicago-based consulting firm specializing in CRM installations. The top three priorities? "Getting the business process right, making sure your staff has the appropriate skills to handle their newly defined roles and — perhaps most important - getting the necessary members of the organization to cooperate," he says.

Here are three golden rules for getting everyone to cooperate in a CRM system:

#### 1. Show the Benefits

Senior managers at accounting services firm Automated Data Processing Inc. (ADP) in Roseland, N.J., were thrilled at projections that a new CRM system would cut company costs by \$450 million. But that wasn't the argument Howard Koenig used when he faced resistance from call center workers, sales representatives and sales managers.

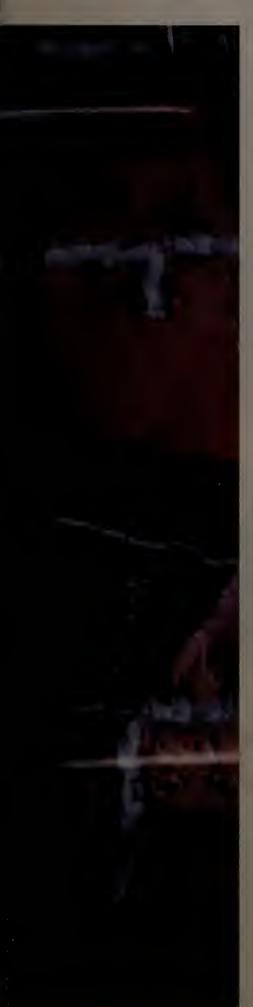
Call center workers were worried about the increased stress of having to enter much more detailed data whenever a customer called — and also about Big Brother type monitoring of their every move. Salespeople were worried that automating the submission of new customer contracts would get in the way of closing deals.

So rather than point out how the new system would help the company, Koenig focused on allaying fears. "We had to demonstrate that the technology was going to make their jobs better," says Koenig, corporate vice president of operations



## BUSINESS

# 5 (0)



and client services at ADP.

He showed call center workers how their managers would be able to better anticipate peak call times, improving staff scheduling. He showed them how having a history of any single customer's interactions with the firm would lead to less-stressful encounters.

Sales representatives, on the other hand, never would have to make a call without knowing about any outstanding issues on an account, Koenig says. And salespeople, who wouldn't get their commissions until a contract was officially processed, could track the progress of a deal through the system.

In addition to meeting company objectives, turnover among call center workers has been cut by more than 10% -"We believe the job is actually less stressful," Koenig says and sales representatives have improved the retention of existing accounts by 5%.

#### 2. Show Them the Money

Indeed, Joe Murray, a principal at KPMG Peat Marwick LLP's customer management practice in Irvine, Calif., says companies should think about providing financial incentives if they want users to adopt CRM systems. Many experts also advise modifying compensation structures to complement the new way of doing things.

"Show them how it's going to put money in their pocket. Structure your compensationmeasurement schemes in such a way that people must go along," says Scott Trudo, president of VBS Consulting Inc. in Amherst, N.H., which helps sales teams make the cultural leap to new systems. For example, rather than paying a flat commission for any contract that gets signed, a company can reward a salesperson with a higher-percentage commission for re-signing a "repeat" customer — because it's more cost-effective to keep a customer than attract a new one. | Or if your firm is trying to convince loners to work as part of a group, there must be some reward for being a team player.

At Everen, bonuses were given employees voted "most helpful" by a customer account. Customers could cast their votes only through the CRM system.

At eye-care products company Bausch & Lomb Inc. in Rochester, N.Y., the CRM system wasn't just giving the sales reps an automation tool — it also turned the call center staff into an auxiliary sales force.

Previously, call center workers simply keyed data into an order-entry system whenever a store chain or optician called to buy more products. With the help of Technology Solutions, Bausch & Lomb revamped its sales organizational structure. With the Vantive system, all customer records were kept online; all contacts with each account were tracked. Call center workers were given a broad range of new responsibilities. Rather than simply take orders, they answered questions by using online technical manuals they could reach with a hot key. They also used each incoming call as an opportunity to sell more Bausch & Lomb products.

If an optometrist called to order contact lenses, says Robert Colangelo, corporate vice president and CIO, "our call center people could look at that customer's record and remind him or her of any products they might need — saline solution, for example."

That was a major change, Colangelo says. Call center workers needed extensive training to learn basic sales techniques, and their compensation packages were revamped to reflect the new responsibilities. Call center workers now have monthly sales quotas just like external salespeople — and their monthly pay re- | Wiley & Sons Inc.

flects how effective they are at selling Bausch & Lomb products. So far, it's working. "They began exceeding their sales targets almost immediately after the new system was installed," Colangelo says.

#### 3. Walk In Another's Shoes

Just about any IT initiative requires cross-functional teams to make a project fly. But that's critical in CRM installations, where once-autonomous employees such as field workers or sales reps feel they're relinquishing valuable control to other employees — and need to feel confident they won't be

At AESS, Jim Livesay, director of product service, found out very quickly that he needed to staff the new centralized telephone control centers — which assumed responsibility for all pre- and postservice call customer support from 135 local offices — with workers who possessed considerably higher skills than a typical telephone operator.

"Our field people wouldn't have accepted the change unless there were truly knowledgeable people on the other end of the telephone," Livesay says. So he took some of his best field workers and managers and placed them in the control centers. "I made it a promotion for them," he says.

That sort of strategy can work brilliantly, says Allan Alexopulos, director of industry solutions at CRM software maker Clarify Inc. in San Jose, Calif. "Identify the individuals who are likely to resist the new system most strenuously and make them a key part of the new system," he says.

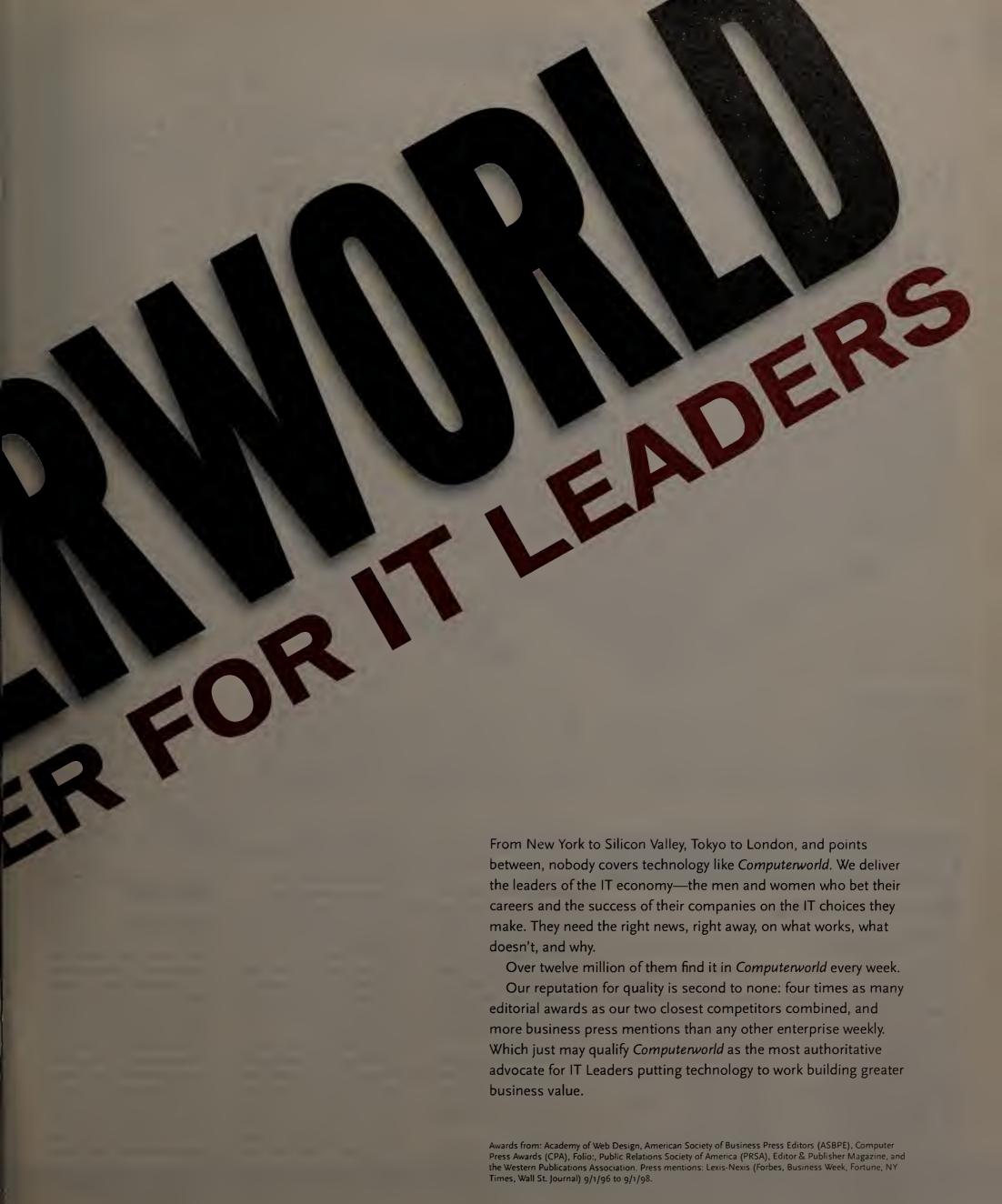
LaPlante is a freelance writer in Woodside, Calif. Her book, Playing for Profit: How Digital Entertainment is Turning Child's Play into Big Business, will be published in May by John

The lack of accurate information is the single biggest source of frustration for field technicians.

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DRIVING THE DEAL/JOE AUER

# Put Onus for Results On the Outsourcer

HEN YOU HIRE an outsourcer, who's responsible for the tasks that are unknown at contracting time but surface later? As outsourcing grows in popularity, we need to have a clear answer. If we accept the supplier's contract, we're the ones who are probably responsible — because a typical outsourcing supplier's contract includes a "statement of work" section that lists all the supplier's responsibilities. Obviously, this is a great deal for the supplier. When something unexpected comes up, the supplier can say, "It's not on my list. We can do this, but here's how much it will cost you."

The tip? Develop a performance-based contract, which is one that commits the supplier to final results, not interim tasks. Have the contract state that any task that falls within this scope, even if not listed, is the supplier's responsibility — up to and including the final results. You will reduce your exposure and put the final responsibility where it belongs — with the supplier.

#### **Users Bugging You? Try** 'Meet-or-Beat Pricing' for PCs

One of the headaches information technology managers face is the know-it-all user. After the IT managers negoti-

ate a good companywide deal for PCs that takes into account complete life cycle costs, they inevitably get calls from users who complain they can walk down the street to PCs-R-Us and get the same box for a whole lot less. Or, they saw the same computer in the Sunday newspaper available through mail-order at a fraction of the price. You can explain until you're blue in the face, but nothing you say can convince these users that the cost of the equipment alone is only part of the picture, and the deal you have addresses life cycle costs such as support and installation.

What can you do? Let your

suppliers help you out. Chances are they are valueadded resellers (VAR). If the VARs are forced to deal with this issue and want to make you, the IT manager, happy, they can agree to "meet-orbeat pricing."

It works like this: If a complaining user can provide documentation of a lower price (like an ad) from another provider, the VAR meets that price for that piece of equipment and the IT manager quotes the services separately to the end

There's really not much risk to the VAR, as there usually aren't many takers out there in the complaining user community. The PR value can be significant and it can be a great marketing pitch for both the VAR and the IT manager.

VARs aren't yet offering this simple and beneficial option during negotiations, so the tip here is: You have to ask. If you're a beleaguered IT manager, you should make it part of the deal.

#### Lease vs. Buy Grows **More Complicated**

Leasing IT assets is relatively common in the corporate world, but it has become more complex with the shift to a distributed computing environment. These days, we need to avoid relying solely on financial analysis to make a decision (even though we still should conduct a cash-flowbased analysis).

Just as important are some nonmathematical factors, such as the corporate treasury's strategic direction. If you're looking to reduce on-book debt, leasing is the way to go. Leasing can also work if your company needs to update its technology frequently to remain on the cutting edge.

However, other considerations come into play. Leases

Vending machines: Candy, soda and

available for 50 cents.

restrict how equipment is used, upgraded, changed or moved, among other things. Lessors can also require you to restore the equipment to its original state prior to return, or pay a high replacement cost if the equipment is lost.

If you're a centralized, topdown-managed kind of com-

pany, leasing would fit well with your corporate personality. But if you have a decentralized and autonomous management structure, it's almost impossible to track the assets and administer the leases effectively. Purchasing the equipment could be the way to go.

There are a variety of tools an IT manager can use to analyze all the criteria in the lease-

or-purchase decision (I only touched on a few points here). Which route you choose isn't as important as the care and thoroughness used in the evaluation, negotiation and documentation.

Remember, a fully developed analysis that takes a comprehensive set of factors into account will help drive a better decision for your company.



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## WORKSTYLES

#### What It's Like to Work at . . . **CUNA Mutual Group**

Interviewee: Jim Bates, a systems manager at the insurance firm. Location: Madison, Wis., in an agricultural area with a concentration of dairy farms, about an hour west of Milwaukee. The CUNA campus is about five miles west of the state capitol building.

IT employees: Just more than 400. Employees (end users): 4,700. Dress: Business casual. Dress-down Fridays? No. discontinued because a lot of visitors come to the complex and the company wants to maintain a pro-

Workday: Information technology

fessional image.

staff members have flexible schedules. Some work five days one week and four days the next. Some work half-days on Fridays during the summer. A typical day is probably 8 a.m. to 4:30 p.m. Office layout: An open layout with cubicles and partitions between desks. The company is spread across three separate buildings in a corporate campus. Office environment: Basic beige. Any windows? Yes. The IT department overlooks an atrium in the center of the building so there are windows all around. The atrium space features tables, chairs, trees, a garden and skylights. Desktops: An assortment of Pentium-based IBMs and Dells; some

Ergonomic devices: People are encouraged to build their work environments with whatever they need. Must people carry beepers? It's a minority, but some do. Does staff telecommute? Some employees do it once per week.

On-site day care? Company sponsors a day-care center that's two blocks away. It accommodates people's work schedules.

In-house cafeteria/food service? Yes. Rating (scale of 1 to 10, with 10 the best): 9. Described as "an excellent cafeteria," which is used as a selling point when recruiting new employees.

Favorite dish in the cafeteria: Sizzling salads - employees make their own salads with shrimp, beef or other "sizzling" meat. Free refreshments: Water: coffee is

sandwich machines. Favorite vending item: In the IT department, Mountain Dew. Cost per soda: 60 cents. Last companywide/department perk: Christmas party at the local Marriott; featured a disc jockey. Would employees feel comfortable e-mailing the CEO? He encourages it and holds a quarterly companywide meeting to update employees on the business. Quote: "I think there's a friendly atmosphere here. I keep Starbursts in my candy dish, and people are stopping by here all the time. And that goes on all over the company. It's a place where people work hard,

but there's also respect for people's

lives outside of work. There's a lot of

flexibility, and the company doesn't

insist on long hours. I'd like to see a

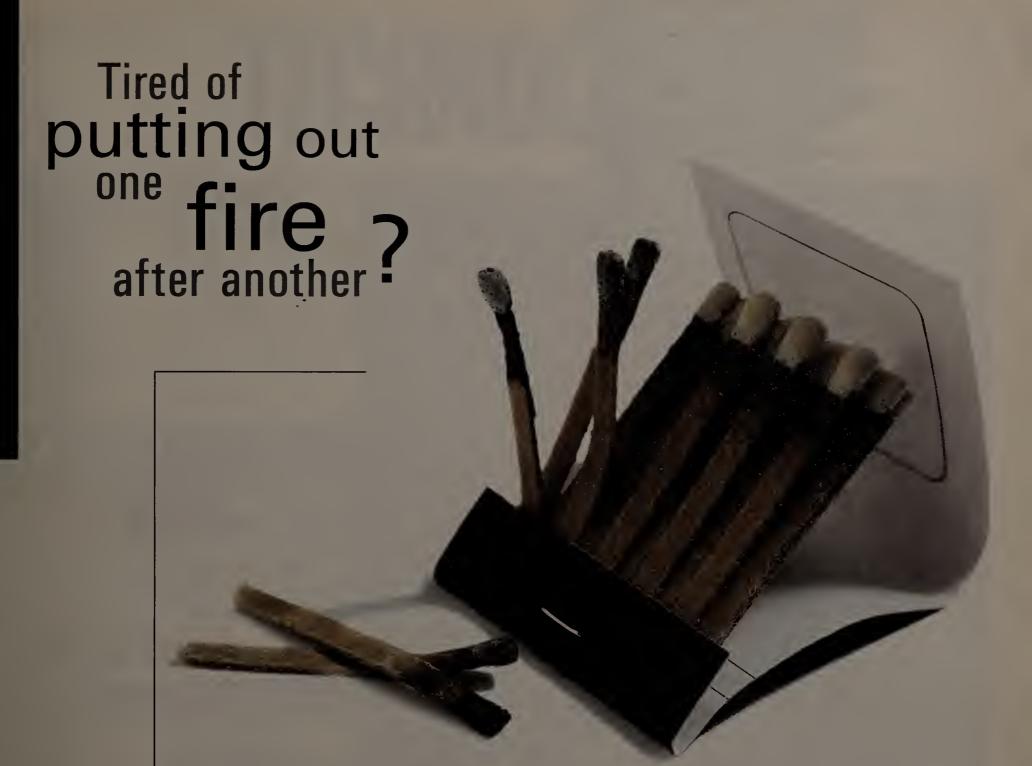
little more color around the place -

the decor could be updated a bit.

But it's generally a positive, upbeat place."

#### Where ClOs Surf for Fun

Most ClOs are heavy enough Web users that they go online for personal use outside the office, but about 10% log off completely when they leave work, according to a survey of 1,400 ClOs by RHI Consulting Inc. in Menlo Park, Calif. Of the nearly 90% who do use the Web during leisure hours, three in four research topics of special interest; almost a third make travel reservations (31%) or buy computer equipment (30%). Just slightly less buy small items like books and CDs (29%) or use the Internet to manage their financial investments (28%). ClOs surveyed work at companies with more than 100 employees.





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# TECHNOLOGY

# HP TOOLS HANDLE QUICKSTUDY: WEB ACCESS LOAD BALANCING

Hewlett-Packard announces software that will let Web administrators at corporations and Internet providers set priority levels and tiered-usage policies for Web access. ▶ 72

#### **CROSS-PLATFORM PORTALS** LINUX? NOT YET

Vendors are promising to port Linux across a variety of hardware platforms, such as Merced and the RS/6000. But before adopting it, users want to see good performance, cooperation between hardware vendors and the opensource community, as well as a good reason to move away from lowerpriced Intel-based hardware. ▶70

Buying company Frederick Atkins Inc. uses specialized tools rather than ERP systems to track its vendors, but finds even they take time to implement. > 68

# LINKING XML, WEB TOOLS

OnDisplay Inc. has added Extensible Markup Language support to its Web businessintegration tool. That should help OnDisplay customers combine supplier catalogs, import content from other Web sites and facilitate data conversion in enterprise resource planning implementations. > 68

Nothing ticks off end users like a "server busy" message. Loadbalancing software can help to keep them happy by solving the dreaded server overload problem. ▶ 76

Yahoo, Lycos, Infoseek, Excite, MSN and their brethren aim to point you to all the links and news you need. We look at three portals to see how well they can be personalized and to get a feel for their differences. ▶ 74

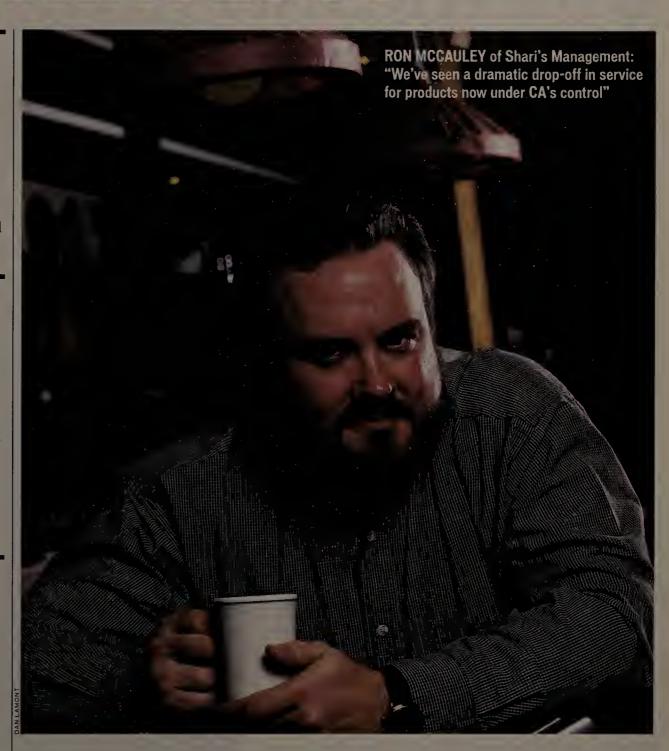
# **EMC EASES**

EMC announced a new Fibre Channel switch that could eliminate bottlenecks in many data centers by quadrupling the number of servers that can link to EMC's Symmetrix disk array. ▶ 70

# FLASHBACK:

In 1959, a group of users, academics and manufacturers created a business programming language. They called it Cobol. For the next two decades, more programs were written in Cobol than in any other language. ▶82

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# SERVICE: PLEASE MAKE MY DAY

IBM ONCE AGAIN takes top honors in our software support survey. Microsoft and Computer Associates International fall to the bottom. In a survey of 151 IT managers, we learned that good telephone support still ranks high on the service list but is an Achilles heel for Microsoft and lowest-ranked CA.

Another tip for software vendors: Reorganize your Web site so support topics are easier to find.

## **TECHNOLOGY** 1

# LOGISTICS APP FILLS ERP GAP

RockPort software's overseas, contracting abilities a better fit for N.Y. cooperative

BY CRAIG STEDMAN

IKE OTHER companies that buy products from hundreds or even thousands of overseas contract manufacturers, Frederick Atkins Inc. needed to wring efficiencies out of its purchasing and shipping operations.

The New York company, a cooperative that buys clothes and home goods for about 30 regional retail chains, looked at enterprise resource planning (ERP) systems such as SAP AG's R/3. But it decided specialized global logistics software from RockPort Trade Systems Inc. better fit its need to group orders from various retailers into one big contract that's then filled by numerous suppliers in the Far East.

Developed by a handful of small vendors, applications such as RockPort's provide product sourcing and contracting capabilities that typically aren't built in to ERP systems. But installing them poses some of the same challenges for users as an ERP project.

Frederick Atkins, which buys about \$200 million worth of products annually for its retail clients, switched on Rock-Port's software early last year to replace a pair of homegrown purchasing applications that weren't compatible and lacked year 2000 support and features such as cargo tracking.

The software is used by about 100 Frederick Atkins merchandise managers, who shepherd the products it buys from design through shipment. Information is exchanged with foreign freight forwarders and sourcing agents via electronic data interchange links into the Unix-based RockPort system.

Len Bellezza, the company's vice president of logistics, said the software has helped Frederick Atkins cut costs by a double-digit percentage in that area by eliminating the need to have people manually track shipments and type in lists of incoming products for its warehouses.

#### **Tough Row**

But getting there wasn't a simple matter. An eight-person team needed six months to install RockPort's software, and Bellezza said the work went that fast only because Frederick Atkins was "very dedicated to moving forward quickly."

As with an ERP project, much of the work involved making sure the software and the company's business procedures meshed, Bellezza said.

End users needed five days of training and a month of hands-on use to master the software — and the job still wasn't finished. A custom front-end application was installed last fall to simplify the system, said John Adams, who manages information services at Frederick Atkins.

Even now, Bellezza said, interface work continues in order to improve the flow of data through the company's supply chain to the RockPort system

and then on to PeopleSoft Inc. financial applications.

RockPort, in Gloucester, Mass., claims about 25 users have gone live with its Rock-Blocks software, which costs \$500,000 to \$3 million. Others with similar software include Minneapolis-based Retek Information Systems Inc.

John Fontanella, an analyst at AMR Research Inc. in Boston, said retail is the most natural fit for these applications and is also "probably the vertical industry that's most underserved by ERP systems."

But user demand is just emerging. Sales of international trade and logistics software totaled only about \$60 million last year, he said.



Brokers speed data delivery to browser

BY STEWART DECK

BroadQuest Inc. last week introduced BroadQuest 2.0, an application that offers access to customer data residing in disparate storehouses. The tool blends live customer data from front- and back office customer relationship management applications in one place and offers users a browser-based view into the data.

The tool gives users in different branches of a company a complete view of the firm's dealings with a given customer. That's an advance, because currently sales and repair databases, for example, often aren't linked, and looking at those records can take frustrating minutes.

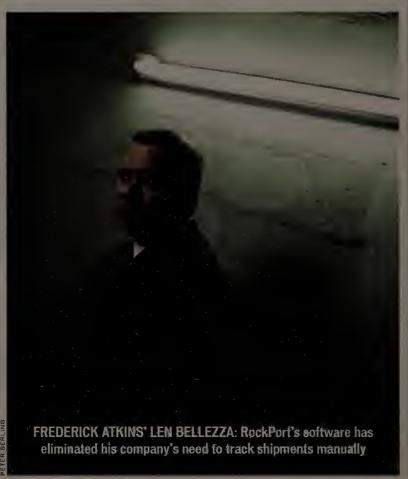
#### **Broker-Based**

Analysts said BroadQuest's broker-based architecture is fairly unusual. It includes data servers (or brokers) that sit between end users and the underlying company database. The brokers communicate with application data sources, such as databases or customer relationship management applications, and keep a cache of data extracted from them for quick reference.

"The broker architecture recognizes that different groups [within a company] have installed different systems and need different mechanisms to interoperate among them," said Geoffrey Bock, an analyst at Patricia Seybold Group in Boston.

Wells Fargo & Co. is testing BroadQuest 2.0 as a way to link customer records residing in multiple bank process and product databases.

Mike Azevedo, senior vice president for small business support services at Wells Fargo in San Francisco, said, "This will let everyday bankers go in and get information about customers without having to depend on a database administrator." BroadQuest 2.0 is available now; pricing starts at \$100,000.



## Integration Software Links XML to Supply Chain

BY STACY COLLETT

A San Ramon, Calif.-based software company is using the Extensible Markup Language (XML) to push the envelope of supply-chain integration tools.

OnDisplay Inc. last week began offering XML support for its stand-alone electronic-business integration software. XML is a Web-based formatting language that allows users to categorize and structure data that's transmitted over the Internet.

OnDisplay's integration

software, called CenterStage, helps companies integrate supplier catalogs, bring in content from other Web sites and facilitate data conversion in enterprise resource planning (ERP) implementations.

what sets CenterStage apart from tools from integration software. Seed formatallows users Inc. is its ability to extract content from structured and unstructured sources such as HTML pages, legacy reports or flat files, said Bob Parker, an

analyst at AMR Research Inc. in Boston. The information then is formatted into an application or database or is output to an HTML file.

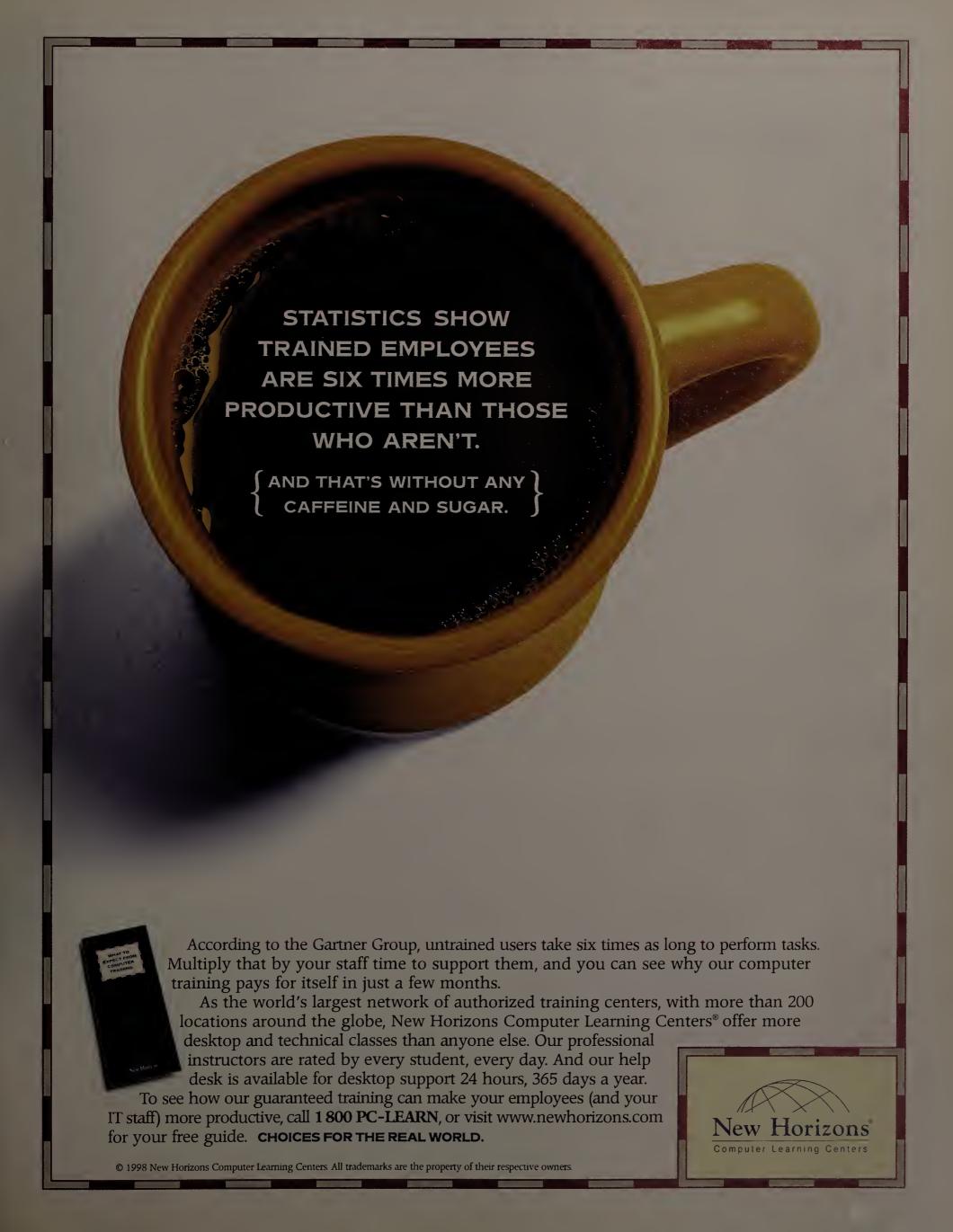
With XML, a company can tag brand and price information to send to another company's order entry system without the need for an electronic data interchange system. Such interfaces are important: Aberdeen Group Inc. in Boston estimates that one-third of the time information technology departments spend supporting

Internet procurement systems goes to maintaining and developing interfaces to supplier systems and internal systems.

OnDisplay software is packaged with procurement applications such as RightWorks, Clarus and TradeEx but can be purchased individually and integrated with a company's ERP or procurement systems. Licenses cost between \$50,000 and \$200,000, based on the number of servers and applications being integrated.

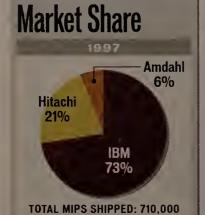
#### **MOREONLINE**

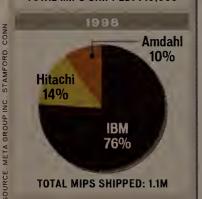
For Extensible Markup Language and supply-chain resources, visit our Web site. www.computerworld.com/more



# TECHNOLOGY

# BRIEFS Mainframe





# **New Web PC**

Austin, Texas-based iDOT.com Inc. has announced a PC for the Web. The company said the system includes a 450-MHz Pentium III processor, 32M bytes of synchronous dynamic RAM, a 4.3G-byte hard drive and a 40-speed CD-ROM drive. Pricing starts at \$999.

www.idot.com

# **Wyse Ships Thin Client**

Wyse Technology Inc. is shipping a thin-client computer based on Windows CE. Called Winterm 3350SE, the terminal has a 200-MHz Media-GX processor from Cyrix Corp. It was designed to support multimedia applications, according to San Jose, Calif.-based Wyse.

A system with 15 resident terminal emulations costs \$749.

www.wyse.com

# Sony Set-Top Videoconferencing

Sony Electronics Inc. has announced a set-top videoconferencing system. Set to ship in June, the \$4,995 Sony PCS-1500 supports the H.320 standard, which allows Integrated Services Digital Network-based videoconferencing.

# LINUX-FOR-ALL FACES OBSTACLES

Even if vendors succeed in porting it to every platform, users may not care

BY DAVID ORENSTEIN

dream: A free, reliable operating system that runs the same applications everywhere you want it to. As Linux is ported to more hardware platforms, that dream seems to be coming true, but it hasn't yet — not by a long shot.

Information technology managers and consultants are concerned about the availability of drivers, the ability of commercial vendors to cooperate with the open-source community that develops Linux, the preference of many Linux users for low-cost Intelbased hardware and the potential that Linux could fragment as it expands to proprietary platforms.

Even an IT manager who said he would love to see cross-platform Linux succeed is being realistic. "This could be the one Unix that unifies things that people have been

looking for for 20 years," said Tom Stoddard, a systems administrator at aerospace and materials giant B. F. Goodrich Co. in Grand Rapids, Mich.

But the prospect of Linux on PA-RISC, which Hewlett-Packard Co. has promised but not set a firm release date for, doesn't mean that Stoddard will necessarily replace HP-UX. Applications will not only have to run at least as well as on HP-UX, he said, but he also needs reassurance from either HP or the Linux community that hardware drivers will be as available as they are on HP-UX.

Rather than do the ports inhouse, Intel Corp., IBM and HP have all said that they will support developers in the Linux community with information and staff.

But because open-source developers aren't the vendors' employees, they can't be controlled as closely, which makes it less certain a Linux port will match the vendor's strategy,

said Sandra Potter, an analyst at Aberdeen Group Inc. in Boston.

Jeffrey Gluck, a spokesman at IBM's RS/6000 division, acknowledged that IBM is new to the open-source development model and that how the process will turn out it is an open question.

Potter said that although many vendor executives know how much damage proprietary

**Linux Everywhere** 

Linux runs on several platforms already and is headed for several more, making it a versatile operating system

### ALREADY RUNS ON

Intel, AMD, Cyrix X86
Digital Alpha
UltraSPARC
PowerPC
Motorola 68000
VAX
PalmPilot

#### PORT UNDER WAY

IA-64 (Merced) ARM MIPS PA-RISC RS/6000 implementations did to the Unix market by killing compatibility among various flavors of Unix, they may still have trouble preventing the same from happening to Linux.

Larry Augustin, CEO of Linux vendor VA Research Inc. in Mountain View, Calif., said that because Linux is free and the source code is open, developers can work in any innovations others come up with.

Rather than fragmenting, Linux can absorb all of its splintered implementations into a greater whole, Augustin said. VA Research is coordinating Intel's effort to port Linux to the IA-64 (Merced) chip.

Intel has been the dominant platform for Linux so far, said George Weiss, an analyst at Gartner Group Inc. in Stamford, Conn. He said vendors of RISC chips such as IBM and HP may find little market for their Linux ports because users who adopt Linux are often looking to save money.

Vince Bertone, MIS director at Miteq Inc., a Happauge, N.Y., company that makes components for satellites, said he isn't that intrigued by the possibility that Linux will run on PARISC machines.

To expand Linux's presence at Miteq, Bertone said, he would just buy more cheap Intel hardware that not only performs well but also saves more money.

# **EMC Announces New Fibre Channel Switch**

Quadruples servers that can link to Symmetrix arrays

BY NANCY DILLON

Hoping to break data-storage bottlenecks in many Fortune 500 data centers, EMC Corp. has announced a Fibre Channel switch that quadruples the number of servers that can link to its flagship Symmetrix disk array.

"Switching technology is what will really drive storage density. Right now we seem to run out of connection ability before we run out the ability to add memory or disk," said Ted Keller, a manager of resource management at freight company Yellow Corp. in Overland Park, Kan.

The new EMC switch is called Connectrix and com-

prises one or two 32-port Fibre Channel directors from Mc-Data Corp. in Broomfield, Colo. It offers centralized management, remote diagnostics and support for both Windows NT and Solaris. Pricing starts at about \$300,000.

"EMC is taking big steps to move storage networking along its way," said Nick Allen, an analyst at Gartner Group Inc. in Stamford, Conn. "But I doubt they'll be able to sustain [Connectrix's high] level of pricing."

He pointed out that although Hopkinton, Mass.-based EMC is proposing switch pricing of at least \$4,000 per port, competitors are offering per-port charges in the \$1,500 range.

EMC also announced six Symmetrix arrays that offer increased capacities and new microcode that boosts performance and the maximum number of logical volumes from 1,024 to 4,096. The 3930, for open systems and PC LANs, and the 5930, for mainframes, support up to 9.3T bytes; other models support less.

"A [single-system] 9T-byte capacity does sound startling at first. But we've got boxes to-day that are as big as our entire disk farm four years ago," Yellow's Keller said. He already has seven Symmetrix arrays and said annual storage growth for his mainframe and Unix

systems is 30% and 60%, respectively.

EMC is achieving the new capacity heights in part by incorporating the latest 36G-byte drives. But it isn't the first to pair the drives with Fibre Channel-attached systems.

Artecon Inc. in Carlsbad, Calif., announced its support for the drives in January.

The new Connectrix switch and Symmetrix arrays are part of EMC's storage-area network (SAN) strategy.

In general, a SAN takes storage off isolated server buses and place it on a shared, high-speed I/O pipeline such as Fibre Channel. SANs are like back-end LANs that can incorporate network devices such as hubs and switches.

Some promised benefits of SANs are easier information sharing, faster access to data and increased availability of front-end LANs and WANs.



# **Behavioral Scientist**

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# **TECHNOLOGY**

# BRIEFS

# Mobile Management Tool for CE, Palm

Mobile Automation Inc. this month plans to ship Mobile Automation 3.0, management software for mobile systems. The Los Angeles company said the tool works on Windows 95, 98, NT and CE and Palm Computing's PalmPilot operating systems. It was designed to work with low-bandwidth, intermittent connections.

The server costs \$4,995; pricing per node for 500 users is \$95. www.mobileautomation.com

# Boca Has Fax/Modem For Power Mac G3

Boca Raton, Fla.-based Boca Research Inc. has a new fax/modern for Apple Computer Inc.'s Power Macintosh G3 minitowers. Called the TelePort Internal 56K Fax/Modem, the card fits into the modem port on the G3's motherboard, leaving the Peripheral Component Interconnect and Universal Serial Bus ports for other computer peripherals.

The product costs \$139. www.bocaresearch.com

# **Token Ring Server Kit**

IP Metrics Software Inc. in Euless, Texas, and Madge Networks Inc. in Wexham Springs, England, have introduced the Madge High Speed Token Ring Server Kit, with 100M bit/sec. Token Ring adapters and IP's load-balancing and fail-over software. IP Metrics said the software lets Token Ring users boost performance by balancing network traffic across two or more adapters in a server. The kit costs \$199 and is shipping now.

www.ipmetrics.com

# Points of Attack Where computer attacks are coming from: 57% 51% 28% Via the Internal Remote Internet systems dial-in 82.58.50 vey of 324 IT security managers, multiple responses allowed

SOURCE COMPUTER SECURITY INSTITUTE SAN FRANCISCO

# CABLETRON COMEBACK?

Roughed-up vendor bets the ranch on network management tools, know-how

BEHIND far larger competitors and coming off an \$85 million loss in its most recent quarter, Cabletron Systems Inc., based in Rochester, N.H., is trying to reinvent itself by going from box vendor to network management kingpin. Cabletron chief technology officer Mike Skubisz last week discussed the No. 4 networking vendor's strategy with Computerworld senior editor Bob Wallace.

Q: What technology are you betting the future of Cabletron on, and why?

A: Management software is the first, as it allows enterprises to unlock the value of the underlying hardware technology to support their business. Management software has changed from a "nice to have" to a "need to have," and Cabletron is investing in our Spectrum [network management] platform [and] also allowing Spectrum's value to be gained through derivative applications that run on top of [Hewlett-Packard Co., Computer Associates Inc.] and Tivoli platforms.

And directory, policy and accounting services fundamentally change how you manage the network ... allowing for user- or application-based decision-making.

Q: Given your position as the No. 4 networking vendor and the fact that you have been struggling, why should large enterprise users buy from you?

A: Management expertise is one reason. More and more, network managers are being asked to align the technology of the network with the business processes of the organization that they work for.

One of the most valuable tools to reduce operational cost and complexity is management software.

If we support [our customers] well and allow them to manage their multivendor environment and continue to

offer feature-rich networking products — that's a recipe for success.

Q: What technologies would improve the tools users would need to manage such things as network design, simulation and planning?

A: It's sad that there are not tools to predict the operation of a network before you build it. In every other industry, there are three steps — planning, implementation and measurement — associated with any project.

Network professionals I talk to never have the time to plan. ... [They] execute, then execute, then execute, then execute again until it works ... then never have the time to measure the effectiveness. Cabletron is investing heavily in "what-if" analysis, capacity planning and behavioral



analysis/modeling software.

Working in conjunction with partners such as Optimal Networks Corp., we hope to answer questions like, "What's required if we add 300 more ERP users to the network?" or "How do we allow the electronic-commerce site to support 10,000 more customers?"

Q: What are the key emerging technologies for the enterprise?

A: Watch the wireless space closely. Now that standards exist for wireless LANs, the prices are dropping and the ease of deployment and interoperability is improving. You'll also see broadband wireless technologies for the WAN that will allow users to deploy high-speed links in the hundreds of megabits for large campuses and metropolitan-area networks.

# **HP Gets Into Web-Access Management**

WebQoS software designed to help companies set priority levels

BY JAIKUMAR VIJAYAN

Corporations that are grappling with ways to ensure acceptable performance and service levels at high-traffic Web sites will soon get some help from Hewlett-Packard Co.

The company this week will launch software that will let Web administrators set priority levels and tiered-usage policies for Web access.

HP's Web Quality of Service (WebQoS) software will let administrators give premium subscribers or certain business units greater priority to Web services than others, minimizing disruptions in service to them.

Products announced include the WebQoS Request Controller for prioritizing user access and a WebQoS Resource Controller that automatically assigns and manages hardware resources for optimal performance. Those products require Versions 10 and 11 of HP's Unix operating system that runs Netscape Communications Corp.'s Enterprise Server Software Version 3.6.

The company also announced partnerships with

### AT A GLANCE HP's Web

# Partnerships

An example of how Hewlett-Packard is working with other vendors to ensure high Webservice levels:

Product: HP and Cisco Dynamic LocalDirector

What it does: Server information captured by HP software is sent to Cisco LocalDirector, which adjusts load distribution between servers

What that means: Prevents one server – or group of servers – from becoming overloaded, resulting in more efficient use

Netscape and Web application vendors such as Breakthrough Software and ClearCommerce Gorp. to integrate their software into HP's WebQoS line.

In the next two years, HP will also expand a program that guarantees up to 99.99% availability on key applications, or less than 5 minutes unplanned downtime annually, said HP CEO Lewis Platt.

Communicating such capabilities to the market is going to be crucial, users said.

"They seem to have expended a lot of effort without establishing a signature product or service" around the Internet, said Chris Seiger, a board member of HP's Interex user group and information technology director at the Alexandria City Public Schools in Virginia.

"If they've got something, the message isn't reaching me yet," he said.



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12K crunch

# Get Into Web Portals

BY DAVID ESSEX

ORTALS ARE THE LATEST Web craze — in the news daily as objects of mergers and acquisitions. They're the first page you see when you connect to the Net. Portals are the ABCs, CBSs and NBCs of the Web — the most fought-over territory in the Net gold rush.

Sites such as Yahoo and Excite were once pitched as places for nonexperts to find things on the Internet. They're still that, as well as search engines and directories. But they're quickly evolving into full-service hubs of electronic commerce, mail, online communities and customized news. The four biggest portals — Yahoo, Excite, Lycos and Infoseek — compete for "eyeballs" with cable TV, magazines and newspapers; they attracted more than 200 million page views per day in the second half of last year, according to the U.S. Securities and Exchange Commission. They've even started calling themselves "networks."

Experts say the coming months will bring better-integrated electronic commerce, more multimedia (especially audio) clips and the ability to personalize portals to access specific information. Within a year, these general-interest portals will start to be eclipsed by niche portals for areas like finance and medicine, predicts Gartner Group Inc. Meanwhile, customized intranet portals will displace brand-name portals in corporations, says Hadley Reynolds, research director at Delphi Group in Boston.

I tested the three most popular portals, which are Yahoo, Excite and Lycos, according to Media Metrix (www.mediametrix. com) and NetRatings Inc. (www.netratings.com) in Milpitas, Calif. I excluded equally prominent default pages for the Microsoft Corp. and Netscape Communications Corp. browsers, Net service providers such as America Online Inc. (see story at right) and Santa Clara, Calif.-based Infoseek Corp.'s site for Lycos.

I still prefer the comparatively spare layout of The Microsoft Network (MSN). Yahoo, Excite, and to a lesser degree, Lycos, are too busy-looking and commercial for my taste. But if I had to pick one, it would be Yahoo, which just seems to have more of what anyone could want in a general-interest site.

Essex is a reviewer in Antrim, N.H.



# **EXCITE INC.**

Redwood City, Calif. www.excite.com

Electronic-commerce-oriented If you're looking for an alternative to Yahoo, try Excite. It puts similar emphasis on easy-to-use directories and links to its own managed sites and others judged to have quality content. Excite, though, seems more electronic-commerce-oriented (especially when you follow links off the start page) – a mixed blessing.

Excite differentiates itself with innovative features. My favorite is "channeling search," which returns things like photographs and tables -

rather than an amorphous list of
Web pages - based on your personal information. There are eight categories (companies, cities, universities, sports, music, movies, TV
and weather) and more coming. I
typed "Boston Bruins" and was
shown the team's schedule followed
by categorized Web sites, with the
uncategorized list at the bottom. A
movie name produced a plot synopsis and local show times.

A Charles Schwab & Co. module tracks stocks and shows price alerts like in Yahoo and Lycos, and there's a news-clipping service.

Overall, the business section is geared more toward market headlines like Yahoo's than Lycos' personal finance-oriented page. But, as with Lycos, you can't reposition the search line or move the list of channels to make room for useful information. Excite also lacks an up-front address book and calendar

but plans to add them.

Excite is perhaps the most balanced of the portals, but I found it the most overridden with commercial hype. I'd use it for personalized information delivery and directorybased searching.



# LYCOS INC.

Waltham, Mass. www.lycos.com Most business-oriented USA Networks, which owns television's Home Shopping Network, recently announced that it might acquire Lycos - the last major portal to be snapped up. The move would position Lycos to add more ways to let surfers buy things. Lycos also made a splash during the past year by acquiring home-page and community-building sites Angelfire.com and Tripod.com. These, plus MailCity's free e-mail and HotBot's excellent search engine (remember the TV ads depicting competing search agents as a roomful of codgers?), make Lycos a popular destination.

Lycos lets you set up a personalized page with favorite information feeds and two-way channels, though none lets you delete the search window or a big ad at the top. Like Excite, it doesn't require a user name and password just to see your page. I fault all three portals for not making it clear what these "modules" do. You can position most of them anywhere on the page, but only Yahoo lets you move the search bar. Lycos is the only one without a news-clipping service to comb the Web for articles on favorite topics. Its business section is well-presented and informative, though geared more toward personal finance than market news.

Overall, I found Lycos to have a less busy, more businesslike appearance, slightly faster screen updates and more accurate searches (especially with HotBot; the primary Lycos engine returned far fewer hits than Yahoo on broadtopic searches). I'd make it my default portal if it had MSN's simpler layout and Yahoo's featurerichness.

# YAHOO!

# YAHOO INC.

Santa Clara, Calif.

www.yahoo.com

Best breadth and depth

Yahoo is the Coca-Cola of megasites - the first and still the best, in many ways. It attracts nearly twice as many eyeballs as second-place Excite and is many surfers' first stop after their default portals.

Yahoo is in danger of losing ground in the rush to high-powered partnerships such as Infoseek's and The Walt Disney Co.'s new Go network. Big, bright and bold directories, chat rooms and news headlines – paid for mostly by advertising – might not cut it if Lycos, Excite and others grab more electronic-commerce dollars flowing along busy, media-hyped links.

That said, Yahoo remains the portal to beat. The breadth and depth of its directories are unmatched. Like Excite and Lycos, it lets you track stocks and mutual funds in near-real time, setting triggers that alert you to target prices. (Yahoo's business news page, at http://biz. yahoo.com, is the most popular financial site on the Web, according to ranking service Web21's 100hot. com.) I was wowed when Yahoo posted articles about my mutual funds within two seconds of setting up my portfolio, though a threedimensional, stock-viewer applet was slow and ugly. You can set up a second personal page, something Lycos - but not Excite - provides.

Yahoo is your best choice for using directory links to find things on the Web. It's also strong for accessing online communities, though I prefer Lycos' broader, more visible links.

# **More Portals to Try**

www.msn.com Internet Explorer default page. Less hype; rich channel variety; Hotmail.

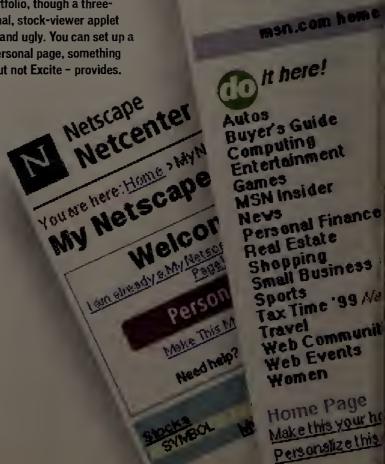
www.netcenter.com Navigator's default page.

www.aol.com You don't need America Online as your Internet service provider to get this portal's plethora of features.

www.altavista.digital.com Venerated search engine now has portal trappings, like directories and chat.

www.infoseek.com Respected for its search engine and roughly as popular as Lycos.

Maich 5, 1979



# BRIEFS

# CrossWorlds Upgrade

CrossWorlds Software Inc. in Burlingame, Calif., last week released Version 2.0 of Interchange Server, its application-integration software. It now has new systems management features and support for Solaris-based Unix servers. The company also introduced packaged versions of its interface development tools, which previously were available only to systems integrators. Pricing for the software and consulting help ranges from \$500,000 to \$750,000.

www.crossworlds.com

# SAP Reference Series

Prima Publishing, a division of Prima Communications Inc., is rolling out seven books for IT professionals who work with SAP AG products. Two books are available now: a revised version of Introduction to ABAP/4 Programming for SAP, by Gareth M. de Bruyn (hardcover, \$50); and Getting Started with SAP R/3, by Dennis L. Prince (hardcover, \$29.99). The rest of the series will be published this quarter, according to the Rocklin, Calif., company. www.primapublishing.com

# Who's Buying What

W. S. BADCOCK CORP., a retailer of home furnishings based in Mulberry, Fla., said it will install supply-chain planning software developed by Atlanta-based LOGILITY INC.... NETSOLVE INC. said it has won a contract to provide remote network management services for **Chicago-based SECURITY CAPITAL GROUP INC. Austin, Texas-based Netsolve will** manage Security Capital's multicarrier frame-relay data network.

# Net Server Appliance

Cobalt Networks Inc. last week announced Cobalt RaQ . 2, a rack-mountable Internet server appliance providing e-mail, and Web and network file services. The system runs the Linux operating system and incorporates a 250-MHz processor and up to 256M bytes of memory, the Mountain View, Calif., company said. Pricing starts at \$999. www.cobaltnet.com

# Dell Remote Access Cards

Dell Computer Corp. said it now offers remote access cards with its PowerEdge servers. The cards allow small and midsize businesses to connect employees to their corporate networks from remote locations, Dell said. Remote users can access the Internet via a central server.

# Integration Tool Hits Beta

TSI International Software Inc., an application integration vendor in Wilton, Conn., is beta-testing an upgrade of its Mercator software, due next month. Mercator 2.0 will include a redesigned user interface and added Extensible Markup Language support. Pricing starts at \$150,000.

www.tsisoft.com

# Addonics Remote Terminals Bow

A new line of Windows-based remote terminals is now available from Fremont, Calif.-based Addonics Communications Inc. The ART 2000 thin-client line offers application access over a network via Citrix Systems Inc.'s MetaFrame and WinFrame software. They cost \$499. www.addcom.com

FRANKLY SPEAKING/FRANK HAYES

# Microsoft mishap(s)

ICROSOFT'S in trouble again. This time it turns out Windows 98 sometimes collects information about a user's hardware and transmits it to Redmond when Windows is registered — even when the user specifically directs that the information not be sent. And some of that "inadvertently gathered" information might still be stored in Microsoft databases — though no one at Microsoft seems to be exactly sure. Oh, and a unique machine ID generated by Windows 98 is also embedded in Word and Excel documents.

It's not bad enough that Microsoft's credibility has been shredded by its executives' testimony in the Justice Department's antitrust suit. Now Microsoft seems to be playing its own riff on the tune we heard a few weeks back with Intel's Pentium III — a unique ID number that can be used to track customers. Except in this case, users' privacy has already been compromised.

Is it true, as Microsoft executives claim, that

this was all just a collection of foul-ups? That there was no grand design to collect information users didn't want collected, no master plan to track users by the ID numbers hidden in their reports and spreadsheets?

Yeah, I can believe it. Because these days, looming even larger than Microsoft's reputation as a ruthless competitor is its growing rap as a clueless corporate klutz.

Consider what actually sparked the latest scandal — the fact that information about hardware was transmitted to Microsoft even when users indicated they didn't want it sent.

Bugs happen. Fair enough. But this bug let a crucial chunk of sensitive information be collected, stored in the Windows 98 registry and transmitted to Microsoft, all against a user's wishes.

You'd think, with Windows 98's extensive testing program, somebody at Microsoft would have noticed this was happening. Apparently, no one did.

Nor did anyone in Redmond notice that the inappropriate information was apparently sitting in Microsoft databases.

At most companies, if the IT shop sat on such a huge pile of customer data without making sure it was clean, complete and appropriate, heads would roll. At Microsoft, that's apparently standard operating procedure.

Or think about those unique identifiers embedded in Word and Excel documents. What possible practical use could they have to corporate IT shops?

The most obvious would be as a way of tracking revisions to each document. Important documents — budgets, reports, contracts — are often passed hand-to-hand, both physically and

electronically, among users.

An ID number embedded in each draft, along with a database of what user is associated with which PC's ID number, could work like a poor man's revision-tracking system. That could be a very useful tool if a company needs to audit a document's history after the fact.

But — having implemented a technology that offered real value to corporate IT shops — Microsoft failed to tell us about it. Instead, the ID numbers just sat there, waiting to become an embarrassment.

And unfortunately, these incidents aren't a shock anymore. They're not even a surprise.

Sure, Microsoft's under pressure from all directions. The company is bound to make missteps. But any vendor without Microsoft's tremendous market lead that regularly fumbled so many opportunities — both for itself and for customers —

would already have collapsed.

We need better. With the amount we're spending on information technology, we deserve better. And if this is the best industry leader we have, we're in even more trouble than Microsoft.

Once feared as ruthless, Redmond is now jeered as clueless.



Hayes, Computerworld's staff columnist, has covered IT for 20 years. His E-mail address is frank\_hayes@computerworld.com.

# Load Balancing

BY BOB WALLACE

OAD BALANCERS can help solve the "server-busy" problem that arises when servers drown from a flash flood of users trying to access them.

They prevent that problem by keeping track of where requests have been routed and knowing roughly how busy each server is.

By approximating that, they can determine where to direct the next request.

For example, a cable network company can devote a Web site to the high-profile boxing matches it broadcasts and use load balancers to handle the crush of site hits during the fights. And a computer company can use load balancers to enable salespeople to access new commission information.

Other users would find load balancing useful because it's an intelligent and affordable

method for apportioning high volumes of requests for server access across multiple machines, be they on the Web or in a data center.

In these scenarios, servers operate more efficiently and end users are happier because the server-busy messages are eliminated.

The more efficient servers are, the less likely the need to add more servers to the network — an expensive move.

egate requests across a widearea network, says Ted Julian, an analyst at Forrester Research Inc. in Cambridge, Mass. However, he notes that most load balancers were designed for use with servers on a single LAN.

If the load-balancing software supports WANs, then servers can be added to the network at any point in the world, and the servers' perfor-

Some load balancers can del- | mance would still be as high as it would be if they were part of a LAN. And WAN costs are held in check because requests are typically routed to the closest server. The farther you send data over a WAN, the more it costs.

> Load-balancing technology can take many shapes. It can be special software that runs on a dedicated server, a proprietary black box or one of many capabilities in an advanced

#### AT A GLANCE

### Where to Route

A sample of ways you can route requests using load balancing:

- 1. Requests can go to a backup server f your primary server crashes
- 2. Requests can be routed to servers based on the content of the server.
- 3. Users can be assigned priority levels; for example, a paying customer's request can be routed before a visitor's request.
- **4.** Disaster recovery. If a server is down because of a flood, requests can be routed to a server located in another facility in another city.

LAN switch — a computerized box that quickly delivers data from one segment of a LAN to

Pricing for software-only load balancers starts at a few thousand dollars, and blackbox system pricing begins at around \$10,000. Load balancing already is built in to some LAN switches.

### Server Content

Not only can companies configure their load balancers to route requests based on server use, but requests can also be routed based on server content such as video, audio or text, according to Bob Bellman, president of Brooktrail Research in Natick, Mass.

For example, if a company has video on two of its five servers, it could route requests from users who want video to those two servers and keep text requests directed to the other three servers, Bell-

'You'd want the servers handling the video to be higherperformance units than those handling the simple text requests," he says.

# MUREUNLINE

For more information about load balancing, visit our Web site.

ww.computerworld.com/more

Are there technologies or issues you would like to learn about in QuickStudy? Please send your ideas to QuickStudy editor Stefanie McCann at stefanie\_mccann@computerworld.com.

#### DEFINITION

Load balancers can prevent servers from being overloaded. They do that by distributing large numbers of access requests across multiple servers. The requests are directed to the most-available server based on utilization. The requests can also be based on content type such as video and text.

# **How load** balancing works:

- Multiple users request Web server
- Based on its history of routing calls, the load balancer decides which server should get the request from each PC.
- The load balancer directs the request to the least-used server. Depending on how the servers are set up, the load balancer could route the request to a server based on content.



# **TECHNOLOGY**



# IT Goes to Hollywood

For six years, Digital Domain has been the clear leader in digital visual effects for feature films. The company has received four Academy Award nominations. Some of its best-known credits are True Lies, Apollo 13 and, of course, Titanic. Scott Ross, Digital Domain's co-founder, president and CEO, originally wanted to be a rock-and-roll star and was in fact a jazz musician before working at Lucas Films from the mid-'80s until 1992. Ross recently spoke with Stuart Silverstone at Digital Domain's Venice, Calif., studios.

How has your computing equipment changed in the past six years? When we started working in high-resolution graphics, there was only one platform: Iris hardware running [Silicon Graphics Inc.'s operating system]. Over these six years, there's been a migration toward NT, with lots more competition on the hardware side from DEC, HP, IBM. Now there's equipment with enough graphics capacity at a price/performance level far superior to what was available in 1992-93. For imaging computers, we have a dual standard: half SGI and half Alpha or Intel-based NT platforms — with SGI now migrating toward the NT-based solution.

On the NT side, we just brought in a boatload of IBM IntelliStations to supplement the DEC Alphas we acquired about two years ago.

How about application software? The acquisition of SoftImage Inc. by Microsoft provided the first major 3-D computer graphics ported to NT. Now other applications are moving to NT. But cost-effective solutions for compositing and

### WHO IS HE?

In 1993, **Scott Ross** co-founded special effects company Digital Domain with Academy Award winners James Cameron and Stan Winston. The company's work on director Cameron's *Titanic* won a 1997 Oscar for Best Visual Effects.

real-time, high-resolution rendering aren't there yet; they're still too compute-intensive.

Also, we've written a lot of code in-house in C++, all object-oriented. One advantage of the time we started [our business] is that object-oriented programming came into fashion, allowing us to use building blocks in most of our software programs. Previously, computer graphics developers had written all their code time and time again, for different purposes, but using similar kinds of applications.

What about servers? For imaging computing, with its rendering issues of high-resolution, deep-bit-per-pixel images, we built render farms — SGIs and, on the NT side, racks of DEC Alphas. I wish there were a cleaner solution. We run Linux, which gives us an opportunity to run

Unix-based as well as NT-based platforms on our render farms. For real-time compositing, we have servers that are multi-CPU, parallelprocessor machines, big SGI Onyxes.

How do you stay ahead of the visual-effects competition that's emerged? There are no big surprises [anymore] in technology. We're aware of most everything; vendors show us products a year or two before they are productized, and we're involved in beta testing. We're up to speed on the next 12 to 18 months.

It's easy to talk about technology. But that's not what it's all about. It's really about artistry, the men and women who use the technology. That's what keeps you ahead of the competition. The real issue is retention of talent, recognizing artists, the persons who drive the boxes.

What kind of staff keeps the technology running? The imaging support group is 7/24 coverage. It's about six people. While we don't have a help desk, we're working on something like that, because as we bring in more and more artists, they are less and less familiar with computer technology — which puts more demand on our system administrators and IT people.

You must be constantly upgrading. We're lucky enough to be on the bleeding edge and to be a visible company, so vendors afford us the opportunity to see the latest and greatest. And in some cases, afford us the opportunity to design it with them.

What could corporate IT managers learn from Digital Domain? Fairly soon, the computer will no

longer be a productivity tool, but a communications tool. The power base has moved from hardware manufacturers to software developers. In a very short time, it will move away from software developers toward the end user, and then the power really falls into the hands of the creative person.

The technology-adverse can now, using the more intuitive interfaces, create without writing algorithms [or] script shells. I can imagine a future of modeling and painting with a pair of virtual reality glasses: seeing the model in 3-D, using a digital paint brush or sculpting knife to model. It's not that far away; we've been doing some experiments with it.

Conversely, what would you like to learn from corporate IT managers? Security. We deal with images worth millions of dollars, images that are highly confidential. With secure distributed networking, we could send images for rendering to a central location. We'd like encryption-encoded security to be able to extend beyond our own firewall.

Any promising technologies on the horizon? Digital projectors. I'm starting to see projectors that come up to the quality of film projection — another step in a total digital process — allowing the acquisition of images on celluloid film, intermediary processing on digital and final projection with digital technology that looks like film.

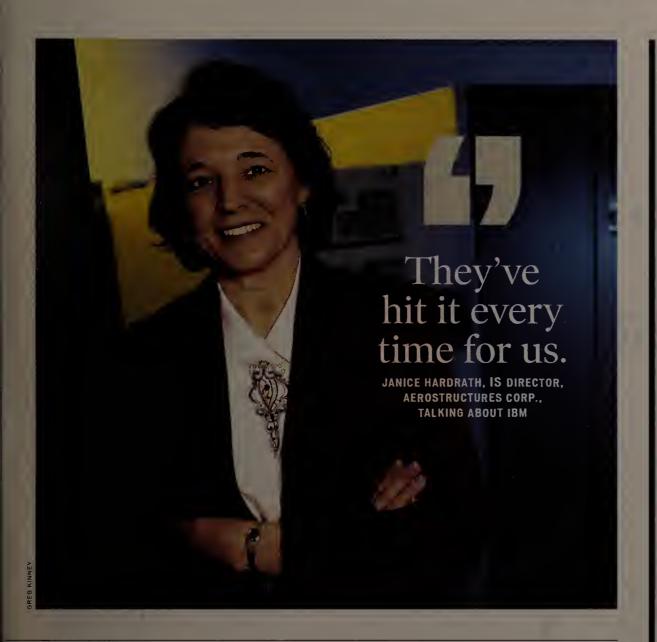
Silverstone is a freelance writer in Los Angeles. His Internet address is stuarts@graphics.org.



Customers say rapid response and extended service plans win big for IBM By Kevin Burden

# OTHERS WAINE

# TECHNOLOGY





# EXCLUSIVE COMPUTERWORLD SURVEY:

# **SOFTWARE SUPPORT**

ENDORS — ESPECIALLY Computer Associates International Inc. and Microsoft Corp. — could learn a lot from IBM about supporting software. In a customer-satisfaction survey, IBM emerged as the model provider of software support, while CA scored the lowest overall satisfaction score.

We asked 151 information technology managers to rate the support from their primary software vendor. Although the phone surveys, conducted by *Computerworld*'s IT Intelligence Unit, can't characterize the opinions of the entire installed base, they still point to pluses and minuses in dealing with five top vendors: IBM, CA, Oracle Corp., Novell Inc. and Microsoft.

In product surveys, IBM's customer satisfaction often lands somewhere in the middle of the pack. But for service and support, our respondents said no other vendor comes even close to satisfying customers as well as IBM.

One negative mark on an otherwise shining IBM record: Some users said they had hoped that IBM's 1995 purchase of Lotus Development Corp. would inspire Lotus to show at least a hint of the same commitment to service by now. But so far, "Lotus hasn't shown us it's learning anything in the way of service from IBM," said Richard Wright, information systems director at Hazelwood Farms Bakeries in Hazelwood, Mo.

Oracle and Novell follow IBM in the standings, and survey responses indicate that both are equally capable of satisfying their customers' service needs. Both are customer-focused, and that orientation shows up in very respectable scores.

Microsoft, the surveyed IT managers said, has a lot of room to improve. We questioned Microsoft customers more closely in follow-up interviews; most said they would rather look for their own answers on the Microsoft Web site than deal with the company's technical support staff. It perhaps isn't surprising that Microsoft's Web-based support was rated the most effective of any vendor included in the survey.

The degree of irritation directed at CA, which placed last in overall support satisfaction, was remarkable. Users complained that the company supports its main products like Unicenter TNG and Jasmine well but nearly ignores its other products.

Software support, whether it comes directly from vendors or through third-party suppliers, will continue to be very important as the world moves more toward a digital economy, according to Chris Hoffman, research manager at Framingham Mass.-based International Data Corp. (IDC). "There's incredible pressure [on IT managers] to leverage technology just to keep up. And with availability of IT skills falling, users will lean heavier on vendor support in the future."

If high reliance on vendor technical support is the only criterion, the future is already here. Nearly one-third of the 151 survey respondents said they placed more than 100 technical support calls in 1998. (The average was 55.) And 37% said the number of calls they made in 1998 increased from 1997.

Software Support, page 80

# EXCLUSIVE COMPUTERWORLD SURVEY:

# **SOFTWARE SUPPORT**

IBM OVERALL SATISFACTION

4.0

IBM's whatever-the-customer-wants approach to service has made it the benchmark by which all other vendors are measured, according to several respondents we questioned. The company scored highest in six of eight rating categories and achieved the highest customer-satisfaction grade in the entire survey for its emergency and mission-critical service.

Past survey results and anecdotal evidence suggest that this isn't exactly surprising news. IBM's around-the-clock service is legendary, IDC's Hoffman says. Survey results merely confirm that the company's policies haven't slipped.

IBM has been honing its service programs for more than 30 years. It has nailed down such logistical factors as how many service representatives are needed in particular geographic areas, which types of situations require full-time, on-site technicians and which require only a technician who is a half-hour away, Hoffman says.

Our IT managers gave the highest grades to the responsiveness and knowledge demonstrated by IBM's phone staff. Unlike Microsoft users, IBM users said the phone was the first support tool they turned to when they had general questions about IBM products.

IBM, they said, best follows the priorities users set when calling in problems. IBM representatives ask users to classify their problems according to seriousness. Priority 1 means a system is down. When that happens IBM's goal is to connect the user to the person best qualified to fix the system within the hour. "They've hit it every time for us," says Janice Hardrath, information systems director at Aerostructures Corp. in Nashville. "When you set a higher priority to your problem, you always get a more experienced support person right away. With Baan, the priority rating doesn't seem to work as well yet."

When Aerostructures was installing a Baan Co. system on its OS/390 mainframe last year, the company called IBM three times per week, but it hardly bothered to try Baan, Hardrath says. As long as your priorities always match your problems, IBM will give you the support you need, she adds.

IBM lost ground in our survey over Web-site support, however. Our surveyed managers said IBM's site is OK for logging minor problems into a queue but not among the best when users need to quickly locate specific solutions. IBM wasn't alone in the area of weak Web-based support; most company Web sites came in for the same criticism. But it's certainly one place that IBM needs to work out.

# **Scoring Highlights**

Top criteria on a scale of 1 to 5, where 1 is very poor, and 5 is very good

Responsiveness of phone staff	4.0
Helpfulness of phone staff	4.0
Effectiveness of Web site	3.5
Responsiveness through e-mail	3.4
Preventive maintenance	4.0
Value for price	3.9
Quality of basic service	3.9

# **ORACLE**

OVERALL SATISFACTION

3.6

Oracle's biggest problem? "It's not IBM," several respondents said. Beyond that, most said it's about as good as a company that isn't IBM can get.

Oracle recorded four second-place finishes, more than any other vendor was able to garner. Even more impressive, it scored them in areas that generally came in for a lot of criticism: availability, helpfulness of its phone staff and quality of its basic and mission-critical support plans.

Oracle's most basic service plans were its biggest strength. That's the area where it recorded its highest satisfaction grade and received numerous accolades from customers. "You'd never know we were just using Oracle's basic package by [how well] we're taken care of," says Frank Palaz-

zolo, director of IS applications at Henry Ford Health Systems in Detroit.

Oracle's mission-critical support is also among the best available, and according to a company spokesman, some users may see it improve very soon. Last year, Oracle began training several of its integrators in implementing and supporting Oracle applications as part of its Oracle Service Provider program. That should give Oracle customers another avenue of support.

# **Scoring Highlights**

Top criteria on a scale of 1 to 5, where 1 is very poor, and 5 is very good

Responsiveness of phone staff	3.8
Helpfulness of phone staff	3.8
Effectiveness of Web site	3,3
Responsiveness through e-mail	3.3
Preventive maintenance	3.4
Value for price	3.3
Quality of basic service	3.9

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You'd never know we were just using Oracle's basic package by [how well] we were taken care of.

FRANK PALAZZOLO, DIRECTOR OF IS APPLICATIONS, HENRY FORD HEALTH SYSTEMS

# TECHNOLOGY

# **NOVELL**

OVERALL SATISFACTION

3.5

"Novell understands the impact on our company when we have problems with their software," says Terry Jackson, director of corporate IS at the Trover Foundation in Madisonville, Ky. Better yet, "they do something about it."

Novell finished close behind Oracle in overall customer-satisfaction scores. And it scored second only to IBM in a few categories in which Oracle fell to third or worse, such as offering preventive maintenance and having an effective Web site for support.

Our follow-up interviews with Novell customers confirmed the initial impressions: IT managers characterized Novell's support team as above average and very attentive to its users' needs. They also praised its Web site, making Novell somewhat unique in this study.

The satisfaction rating of its site's effectiveness wasn't entirely stellar, but users such as Terry Manternach, Unix systems manager at Cedarapids Inc. in Cedar Rapids, Iowa, says it's rare when his questions can't be answered by a visit to Novell's site. Novell also scored highest for its responsiveness to e-mail, which may have much to do with the success of its Web site.

# **Scoring Highlights**

Top criteria on a scale of 1 to 5, where 1 is very poor, and 5 is very good

Responsiveness of phone staff	3.5
Helpfulness of phone staff	3.8
Effectiveness of Web site	3.4
Responsiveness through e-mail	3.4
Preventive maintenance	3.5
Value for price	3.6
Quality of basic service	3.7

# 67

If you're on a mainline product, you're probably happy with CA's support.

CHRIS HOFFMAN, RESEARCH MANAGER, INTERNATIONAL DATA CORP.

# **MICROSOFT**

OVERALL SATISFACTION

3.2

The effectiveness of Microsoft's support depends on who you are, or whom you know. The company is highly selective in determining who receives its Premier Support plan, the very attentive service it's using to get deeper into the corridors of the Fortune 500.

The very large — 2,500 users or more — enterprise-level companies fortunate enough to be included in Premier Support receive Microsoft's undivided and very effective attention. But the mediocre grades Microsoft received from our survey come largely from the rank-and-file companies that don't qualify for Premier class. These users, the vast majority of Microsoft customers, are bounced to one of the company's many support partners.

Microsoft placed last among the five vendors in several key areas, namely the availability and helpfulness of its telephone staff, its preventive maintenance and the quality of its basic as well as its mission-critical support.

One bright spot for Microsoft: Users really like its Web-site support and gave it the highest grade of any in our survey. "This matches the strong self-support culture at Microsoft. And unlike its support partners, its Web site is [under] its control," Hoffman says. Respondents said that between its Web site and its TechNet informational CD-ROM service, Microsoft is the best at letting its users help themselves. "Ninety percent of my NT questions are answered by the information on their site," says John Baldino, IT director at Wawa Food Markets Inc. in Philadelphia.

"Receiving TechNet is like having the entire Web site sent to us each month on searchable CD-ROMs," says Ed Smith, network manager at Homeland Stores Inc. in Oklahoma City. "For the two years we've subscribed to it, we haven't had to call Microsoft once."

# **Scoring Highlights**

Top criteria on a scale of 1 to 5, where 1 is very poor, and 5 is very good

Responsiveness of phone staff	3.1
Helpfulness of phone staff	3.8
Effectiveness of Web site	3.6
Responsiveness through e-mail	3.2
Preventive maintenance	3.0
Value for price	3.3
Quality of basic service	3.4

CA OVERALL SATISFACTION

3.1

"Dead last with a bullet," says Ron McCauley on learning of CA's low customer-satisfaction rating. McCauley, who is the IS director at Shari's Management Corp. in Beaverton, Ore., says he's moving away from CA products because he isn't getting the support he needs.

McCauley was using MLink for remote communication to his Unix environment before CA took control of the product when it acquired Legent. "In our experience, if you have a package you like [and] then CA acquires the company, that's unfortunate," McCauley says. "We've seen a dramatic drop-off in service for products now under CA's control."

This isn't new territory for the company. CA has consistently scored poorly on service issues in most *Computerworld* customer satisfaction surveys. That's because CA has never had the heritage of a service company, Hoffman says. "It is a product company without the strong service partnerships of Microsoft," he says. CA has

acquired so many products that it's forced to choose which ones it will support while leaving the rest of its users to work out their own problems.

While our respondents disliked most Web-site support offered by the vendors in the survey, CA's showing was especially poor. it alone failed to receive a single "very good" rating for its Web site.

The good news: CA did receive a respectable grade for its mission-critical service, proving it can perform well when it wants to. "If you're on a mainline product [such as Unicenter TNG or Jasmine], you're probably happy with CA's support. It's the other 400-plus products that suffer," Hoffman says.

# **Scoring Highlights**

Top criteria on a scale of 1 to 5, where 1 is very poor, and 5 is very good

Responsiveness of phone staff	3.3
Helpfulness of phone staff	3.3
Effectiveness of Web site	3.0
Responsiveness through e-mail	2.9
Preventive maintenance	3.1
Value for price	2.8
Quality of basic service	3.5

50 YEARS OF TECHNOLOGY INNOVATION • 1950-1999

# Technology Happenings

- Fairchild Semiconductor's Robert Noyce and Texas Instruments Inc.'s Jack Kilby separately file for a patent for the integrated circuit. Both men eventually are recognized as co-inventors.
- The Whirlwind at MIT and the Harvard Mark I are shut down.
- **IBM** introduces its first **transistorized computers**, the 7000 series. The first is a transistorized version of the 709, the 7090.
- IBM announces two desk-size machines the IBM 1401 for small-business users and the IBM 1620 for scientists. The 1401 is the most popular computer up to this time more than 10,000 will be sold.
- General Electric Co. delivers
  32 ERMA (Electronic Recording
  Machine Accounting) systems
  to Bank of America in California to help process checks
  used by the public. The ERMA
  system uses magnetic ink
  character recognition technology, which captures data from
  checks
- MIT produces the first product made using computer-aided design: an aluminum ashtray.
- An IBM 704 is programmed to translate printed text into Braille.
- The Radio Corporation of America introduces the RCA 501 transistorized computer.

# **Born in 1959**

- Peter Shor, mathematician, computer scientist, pioneer of quantum computing algorithms
- Stephen Wolfram, creator of the computer program called Mathematica
- ★ Keith Lockhart, Boston Pops conductor

# Other Notables

- \* Average price of a gallon of gas: 30.5 cents
- **▼ The BMW 600** costs \$1,498, accelerates up to 65 mph and gets 50 miles per gallon.
- Best Picture: Ben Hur

# The Creation of Cobol

BY MARY BRANDEL

OU KNOW that little year 2000 problem? Well, it all began 40 years ago. On May 28, 1959, the Conference of Data Systems Languages (Codasyl) met for the first time, with the idea of developing a universal language for building business applications. That language was Cobol, short for "common business-oriented language." And it's Cobol's dramatic suc-

cess that's at the heart of the millennium bug.

Influenced by Fortran, a programming language for the scientific

community, and FlowMatic, an English-language compiler for business data processing built by Grace Hopper, the group recognized the growing needs of the business community.

"We thought, If the scientific programmers are going to get a single language, we could do the same for business," says Bob Bemer, who at the time was completing work on Fortran at IBM. With Hopper, Bemer served as an adviser to Codasyl. He is responsible for coining the term Cobol.

By April 1959, that undercurrent swelled into action. At an informal meeting at the University of Pennsylvania in Philadelphia, a small group of computer manufacturers, large users and academics asked the Department of Defense (DOD) to head the effort.

The next month, the DOD called the first meeting of Codasyl, which consisted of

eight computer manufacturers and a few large users. The DOD broke Codasyl into several committees, and by June, the nine-member "short-range committee" was asked to undertake a six-month investigation into developing the language.

"We worked almost full time doing the language specification, even though we were all employed by different employers," says Howard Bromberg, who was a Codasyl member

and an employee at RCA Corp.

In addition to machineindependence, one of the most important require-

ments of the language was simplicity. The committee wanted the language to be readable by laypeople, which led to the idea of using English.

But just because Cobol was designed to be easy to learn doesn't mean it was easy to build.

"In business, there are no scientific laws and no algebra, but there are different laws for the 50 states, different fiscal years and different reporting



PARTICIPANTS AT COBOL'S 25TH ANNIVERSARY celebration at The Computer Museum in Boston on May 16, 1985, surround the Cobol Tombstone. Left to right: Ron Hamm, John J. Jones, Jan Prokop, Oliver Smoot, Thomas Rice, Donald Nelson, Grace Hopper, Michael O'Connell and Howard Bromberg

requirements," Bemer says.

In addition, computer manufacturers were trying to develop their commercial Cobol compilers while Cobol's specifications were being defined. All decisions had to be approved by Charlie Phillips, the DOD representative who directed Codasyl.

"I used to get frustrated — I had a group of people sitting there trying to build a Cobol compiler." Bromberg says.

That led to the famous "tombstone incident." Bromberg sent a granite rombstone to Phillips with the word Cobol inscribed on it. He figured it would get his point across

about the fate of Cobol if things continued to move so slowly.

A complete specification was finished in just six months. That was in December 1959. By the following year, Cobol was commercially ready, and for the next 20 years, more pro-

grams were written in Cobol than any other language.

Unfortunately, it was the resulting tidal wave of Cobol programming that now has us anxiously checking our watches as they tick away toward 2000.

Although the Cobol creators played their part in the problem — specifying two-digit year fields for capturing and manipulating system dates — the blame falls just as squarely on the programmers, who could have used four-digit year fields, says Jerome Garfunkle, a year 2000 consultant who served on the American National Standards Institute's Cobol Committee for 20 years.

In 1974, Cobol officially changed to four-digit date fields, but that change obviously didn't catch on right away.

Brandel is a frequent contributor to Computerworld. Contact her at brandel@cwix.com.

Fidel Castro becomes premier of Cuba after expelling President Fulgencio Batista a month earlier.

NASA announces the first seven American astronauts: Scott Carpenter, Gordon Cooper, John Glenn, Gus Grissom, Wally Schirra, Alan Shepard and Donald Slayton.

JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER

Soviet space probe Luna II becomes the

first man-made object to reach the moon

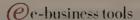
Buddy Holly, Ritchie Valens and the Big Bopper (J. P. Richardson) are killed in a plane crash outside Mason City, Iowa.

JANUARY FEBRUARY MARCH

Tibet's Dalai Lama escapes to India.

President Eisenhower signs the executive order making Hawaii the 50th state. Twenty-one TV game show contestant Charles Van Doren admits to a House subcommittee that he received questions and answers in advance.

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# TECHNOLOGY REGIONAL SEDE

# Will the Real Silicon Valley Please Stand Up?

Growing competition is spurring Valley companies to give their work culture a serious makeover By Emily Leinfuss

in New York, Silicon Prairie in the Midwest — it may be hard to recognize the real Silicon Valley in California. Especially because some say it's entering an era of kinder, gentler and a bit slower work practices.

The first sign of change in Silicon Valley is the dip in the local economy's growth. Overall expansion fell from 5% to 2% in the past two years because of the Asian economy and a slowdown in the semiconductor industry, says Doug Henton, president of Collaborative Economics in Palo Alto, Calif., an economic indicator consulting firm.

That may be a blessing in disguise, because the area is saturated to the development breaking point. Every nook and cranny is already occupied by an office building or a house. Companies searching for IT talent are increasingly looking to import from outside the Valley and are searching for ways to meet the needs of people who are used to a slower pace and lower cost of living.

The third indicator is that job perks are changing. Com-

panies that once gave away rides on the corporate jet and Mercedes Benz are giving workers their lives back.

Increased competition has Valley companies beefing up on perks, benefits and compensation, says David Schutt, senior manager of global workforce strategies at Nortel Networks in Santa Cruz, Calif. "This is causing a new wave of companies to offer more intangible stuff like flexibility and a more balanced work and home life," he says.

Schutt says more and more Silicon Valley IT pros are working from home and exercising their rights to the freedom and flexibility offered as recruiting perks. Nortel offers such perks by being more open to telecommuting and providing a health spa, gift shop, dry cleaners and travel agency at its facility — and, of course, the time to take advantage of them.

#### Skill Sets

IT skills needed in Silicon Valley are broad and include client/server development, Internet and networking expertise and the imagination to envision systems in convergence. "Telecommunications, data communication and multimedia are all coming together,"

Schutt says

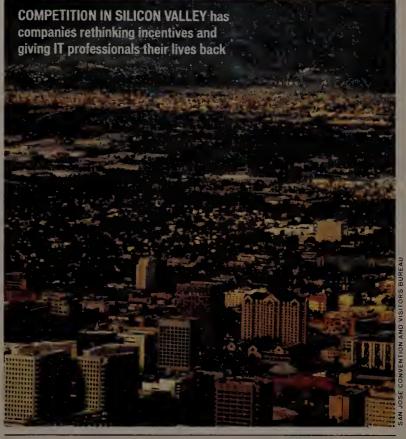
Schutt suggests that jobhopping is slowing because of a leveling out of compensation across the board. That may be true at IT and vendor firms. But at non-vendor companies that can't necessarily match the financial aggressiveness of their neighbors, managers are finding other ways to prevent the loss of good IT professionals and are changing the dynamics of employment from short-term to long-term stays.

### A Sense of Care

Creating a more stable workforce is driving Menlo Park, Calif.-based SRI International to rethink its incentives. Jim Swartz, CIO at the high-tech firm incubator, is developing a vesting program that would build over several years to help tie employees to the company.

And Randy Gardner, vice president of IT at Viking Freight Inc. in San Jose, Calif., takes extra care to appraise promising newcomers and peak performers. He also strives to maintain the quality of employee work life by paying attention to career growth and giving them the sense that the company is looking after them. "I make sure managers encourage IT employees to ensure they are happy, challenged and well-established," he says.

Recruitment strategies are also changing. For example, Mike McNeal, director of human resources for U.S. operations at Cisco Systems Inc. in San Jose, says managers at his firm don't wait for talent to come to them. Cisco's proac-



# **Experience Raises Silicon Salaries**

Average total compensation in Silicon Valley region for 1998:

JOB TITLE	EXPERIENCE, 1-2 YEARS	3-4 YEARS	4+ YEARS
Network admin./analyst	\$53,000	\$56,000	\$75,000
LAN manager	\$61,000	\$68,000	\$80,000
Project manager, systems and programming	\$69,000	\$78,000	\$89,000
Senior systems analyst	\$59,000	\$69,000	\$77,000
Senior systems programmer	\$62,000	\$69,000	\$79,000
Senior programmer/analyst	\$59,000	\$67,000	\$77,000
Programmer/analyst	\$47,000	\$55,000	\$66,000
PC support specialist	\$35,000	\$41,000	\$48,000
Computer operator	\$31,000	\$35,000	\$38,000
*CALADIEC DI LIC INCENTIVEC	• • • • • • • • • • • • • • • • • • • •	***************************************	•••••••

tive tack involves targeting talent pools and using aggressive sales and marketing tactics.

In light of that fact, if IT professionals are great at what they do, continually educate themselves, are visible and innovative and take educated risks, "the Valley will find you," McNeal says.

Leinfuss is a freelance writer in Sarasota, Fla.

# A ROLL OF THE DICE

It doesn't take a market economist to figure out that Internet, network-based and software companies are booming in Silicon Valley. But information technology professionals at non-vendor firms in the Valley say the trade-off to the stock options and incentives, particularly at high-profile start-ups, is working in chaos with no safety net.

"High growth means there is chaos in the organization, which affects the work environment and attitudes," says Randy Gardner, vice president of IT at Viking Freight. Plus, it's a gamble to work at the

EBays and the Excites, says Ken Phillips, director of IT for the city of San Jose. "You are rolling the dice, and the payoff may be big, but it may not," he says.

Gardner says corporate culture conflicts are between larger, more entrenched companies and start-ups. "The key for IT players is to know what you want," he says. "At Viking, we have a well-established, structured environment. People who like that and are working at a more chaotic company may get disenchanted."

As Viking prepares to hire 36 individuals in the next 16 months, Gardner says he's up against a wall. "There is a shortage of skilled workers in all leading technologies: database administration, client/server

development, Java and Internet development, and quality assurance," he says.

To mitigate some of the challenges of hiring IT professionals in Silicon Valley, Viking is joining a growing number of firms that are establishing auxiliary development facilities outside the Valley. In Viking's case, it will staff project teams to develop systems in a new center in Phoenix.

David Schutt, senior manager of global workforce strategies at Nortel Networks, identifies that as a trend. But that doesn't change the fact that the Valley "is the only place where you really rub shoulders with the computer industry elite," says Jim Swartz, CIO at SRI. – *Emily Leinfuss* 

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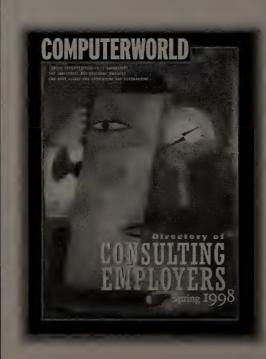
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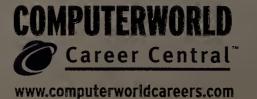
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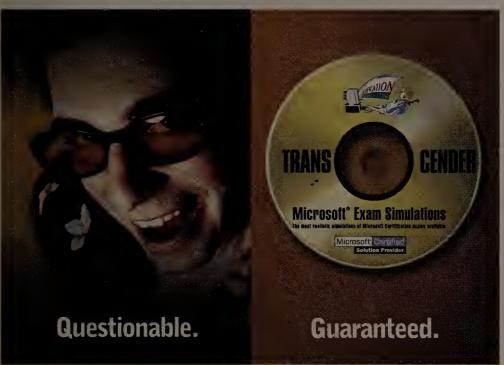
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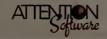




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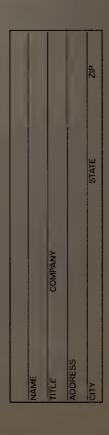
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# STOCK UP DESI ANTITRUST

.. 9.06 9.00

Yet analysts debate merits of buying Microsoft now

Hitachi Ltd....

BY KATHLEEN OHLSON

'N THE INITIAL phases of its antitrust case, Microsoft Corp. made some gaffes that made the company look none too good. Recall, for example, when James Allchin, Microsoft's senior vice president of Windows, admitted on the witness stand that a videotape demonstration had been rigged.

Yet that same day, Microsoft (Nasdaq:MSFT) stock fell barely 5 points, from 172-15/16 to 167-5/8, and was trading at

among the highest prices in a year. (A 52-week low of 79-11/16 was recorded on March 16, 1998, and the 52-week high of 175-15/16 was on Jan. 31 this year.) And even as many observers expect that U.S. District Court Judge Thomas Penfield Jackson will rule against the company, the stock continues to cost more now than it did when the trial began.

The case now is in recess, with a verdict from Jackson not expected until at least June. Most analysts won't speculate how the possible outcome could affect Microsoft's stock price, but some still are encouraging investors to buy.

If Microsoft loses the antitrust case, it won't affect Microsoft's day-to-day operations and the stock should hold its value, said Jeffrey Maxick, an analyst at Madison Securities in Chicago. He noted that Microsoft's stock will be even more of a Buy after March 26, when it will split for the eighth time.

Analyst G. Patrick Dunkerley at Securities Corp. of Iowa in Cedar Rapids, Iowa, also said Microsoft's stock is a Buy because it's a "great company with

great fundamentals" that undervalues its earnings and stock. For example, Microsoft reported 73 cents per diluted share in profits for this year's

second quarter, trumping brokers surveyed by First Call Corp. in Boston who had predicted 59 cents per share.

But another analyst said his firm has put a Hold on Microsoft stock, warning investors it's not worth the expense, which was around \$160 per share last week. In addition, John Puricelli at A. G. Edwards & Sons Inc. in St. Louis said if Tackson's decision alters Microsoft's business model, the stock won't be worth the price. "There is too much hanging over Microsoft," Puricelli said.

The In Mana Make the Nice						
EVENT	DAY BEFORE	DAY OF	DAY AFTER			
Trial opens (Oct. 19, 1998)	105-1/16	102-15/16	100-1/4			
Bill Gates deposition (Nov. 16, 1998)	110	108- <sup>19</sup> /16	109-3/4			
James Allchin on stand, video discrepancy discovered (Feb. 2, 1999)	172- <sup>15</sup> /16	16 <b>7-</b> <sup>5</sup> /8	166- <sup>13</sup> /16			
Microsoft defense rests, trial recess begins (Feb. 26, 1999)	153-1/2	150-1/8	151-3/4			

EXCH	52. WEEK	RANGE		MARCH 12 2 PM		WK PCT Change	EXCH	52- WEEK	RANGE	M	ARCH 1 2 PM
SOF	TWAF	E OFF	-2,8%				NT PAIR	69 25 24 37	26 81 6.00	Northern Telecom Ltd Pairgain Technologies Inc	59 9
AD8E	51.87	23.62	Adobe Systems Inc.	46.8	1 1.0	5 23	PCTL	11.93	4 15	Picturetel	8
AZPN ADSK	\$6.87	6.12	Aspen Technology Inc.	12.7			SFA TLAB	3S.00 93 12	11.75 31.37	Scientific Atlanta Tellabs Inc	_ <u>26</u>
AVIO	49.43	21.62 11.06	Autodesk Inc. Avid Technology	30.1			USW	66.00	46.81	US West	54
8DDL	34.87	16.00	Boole & Babbage Inc.	23.7			VRLK	11.18	2.87	Verdink Westell Technology Inc. Xylan (H)	3
	42.50	6.12	Businesss Dhiects S.A.	34.2			WSTL	14 7S 36.50	9.62	Westell Technology Inc.  Xylan (H)	36
DN 8TSY	39.00 63.87	19 12 6.68	Cadence Design Systems	23.0			ATLIN	30.00	5.02	Aylan (11)	30
HKPF		10.87	C8T Group Pic. Checkpoint Soltware	12.7 40.2			SEM	ICON	OUCTO	RS, CHIPS & EQUIP	MEN
TXS	107.50	39.75	Citrix Systems Inc.	79.2	5 -3.13		-				
	30.50	14.78	Cognos Inc.	21.5			ADPT AMO	26.7S 33 00	7.87 9.31	Adaptec Advanced Micro Devices	20
PWR	61.93 40.00	26.00 17.93	Computer Associates	35.5			ALTR	71.87	28.25	Altera	58
CTM	59.62	16.75	Compuware Corp.  Documentum	19.3	1 2.50	0 -11.5	AD1	39 62	12.00	Analog Devices	28
FII	41.00	13.50	Electronics For Imaging				AMAT	71.62	21.56	Applied Materials	61
NCS	47.12	22.50	Hnc Sottware	25.0			ASML HRS	49.06 SS.31	12 93 27.56	ASM Lithography Holding Harris Corp	30
MX	5S.75 14.00	13.87 3.S0	IDX Systems (L) Informix Software Inc.	16.7	S 1.69		INTC	143.68	65.65	Intel Corp.	
	104.75	34.18	Intuit	87.8			KLAC	65.00	20.75	Kla Instruments	S4
KHY	55.00	29.00	Jack Henry Associates	37.3			LLTC	\$3.50	19 86	Linear Technology	46
DEC	49.50	13.S6	J.D. Edwards & Co.	13.9	4 -0.81	-5.5	LS1 MXIM	29.93 56.62	10.50	LSI Logic  Maxim Integrated Products	2S 4S
GTD	67.75 42.50	23.50	Legeto Systems Inc. Mecromedia Inc.	54.8 35.5			MU	80.56	20.06	Micron Technology	50
IANU	66.37	6.12	Manugistics Group Inc.				MOT	74 43	38.37	Motorola	67
IENT	15.06	S.43	Mentor Graphics	12.6			NSM	24.75	7.43	National Semiconductor	10
ISFT	17S.93	79.68	Microsoft Corp.	159.4	4 5.00	3.3	STM	107.62	35.87 17.68	SGS-Thomson Microelectronic Solectron Corp. (H)	s 89 49
ETA	67.68	25.50	Network Associates	43.6			TER -	66.50	15.00	Teradyne	52
MH OVL	S7.87 25.00	30.37 9.18	Network General	47.8 24.2			TXN	107.87	45.37	Texas Instruments (H)	98
RCL	41.18	12.25	Novell Inc. (H) Oracle Corp.	29.2			UNPH	100.50	31.25	Uniphase (H)	100
MTC	36.31	8.50	Parametric Technology Corp	18.0			VTSS	52.93	17.12	Vitesse Semiconductor Corp	46
PSFT	57.43	16.50	PeopleSoft Inc.	17.6	3 -0.S	-2.8	XLNX	43.87	14.87	Xilinx (L)	36
IXR	66.00	27.50	Pixar _	40.3			CON	DUTE	D CVC	TEMS UP 1.8%	
LAT	34.31 35.62	9.00 10 S0	Platinum Technology Inc. Rational Soltware Corp.	11.0 24.3			GON.	IFUIL	W 215	1EM3 UF 1.070	
AP	60.12	28.25	SAP AG (L)	26.6	3 -2.50		AAPL	47.31	22.93	Apple Computer Inc.	33
CUR	29 00	6.37	Secure Computing Corp.		4 -2.19		ASPX	11.81	1.62	Auspex Systems (H)	11.
	50.25	20.12	Sterling Commerce Inc.	29.3			CPQ DGN	51.25 21.81	7.00	Compaq Data General	30. 11.
W	32.81	20.12	Sterling Software Inc.	22.2			DELL	SS.00	15.25	Dell Computer Corp. (L)	41,
ORC Y8S	29.00 11.62	7.50 4.50	Structural Dynamics Research Sybase Inc.	7.3			GTW	84.S0	36 12	Gateway 2000 Inc	68
YMC	32.62	8.68	Symantec Corp.	15.7			HWP	83.87	47.06	Hewlett-Packard Co.	68
IPS	61.25	24.50	Synopsis	46.9	4 1.50	3.4	HIT IBM	77.00 199.25	40.18 96.68	Hitachi Ltd IBM	71
CTC	30.87	7.81	Systems & Computer (L)				MUEI	24 78	9.68	Micron	178 12
ANF	55.50 39.75	7.2S 5.00	The Baan Co N.V The Vantive Corp	7.2	5 -0.19 0 -0.13		MDT	74.43	38.37	Motorola	67.
AI	51.00	27.06	Trans. Sys. Arch.	37.6			NATI	36.S0	17.50	National Instruments Corp.	29.
TS	86.00	23 78	Veritas Software Corp.				NCR	55.78	23.50	NCR	44
ND_	34 43	17.SO	Wind River Systems Inc.		6 -0.31	-1.4	NIPNY	\$7.75 13.25	31.00	NEC Procom Tech Inc.	55.
~							SQNT	20.87	5.68	Sequent Computer Systems	9.
ELE	COM	MUNI	CATIONS CARRIER	SUP	1.4%		SGI	20.87	7.37	Silicon Gralix	14.
TI	98.87	42.25	Airtouch Communications	93.3	1 2.00	2.2	SNE	97.25	60.25	Sony (H)	96.
T	66.50	38.25	Alltel Corp.	59.19	0.31	0.5	SUNW	115.75	38.18	Sun Microsystems	104.
IŤ	69.37	41.50	Ameritech Corp.	66.4			TEXM	S.93 4 87	2.00 0.37	Texas Micro Tricord Systems	3.
WON	28 2S 96.12	10.37 48.37	Andrew Corp.	12.S 81.6	6 -2.06 9 -6.00		UIS	36.37	17.25	Unisys	30.
DE	46.62	25.62	8CE, Inc.	42.0			1				
EL	61.18	40.43	8ell Atlantic	\$5.0	6 -0.13		INTE	RNET	UP 4	.9%	
LS	50.00	30.06	Bell South	46.3	8 0.50	1.1	AMZN	199.12	12 87	Amazon.com	130.
SN	21.56	8.50	Cincinnati Bell Inc.	19.5			ADL	95.81	15.12	America Diline (H)	95.
ACSK	78.43 42.75	32.62 21.7S	Comcast Comsat Corp.	73.8 32.0			ATHM	131.00	23.50	@home Corp	113.
Χ	80.87	38.87	Cox Communications Inc. (H				CKFR	42.00	5.75	Checkfree	39
STRF	37.12	8.31	Globalstar Telecom. Ltd.	17.0	0 1.19	7.5	CYCH	27.75	5 87	Cybercash, Inc.	11.
TE	71.81	46.S6	GTE Corp.	62.6			EDFY EGRP	20.87 66.43	4.62 5.00	Edify Corp. ETrade Group Inc.	6. 52.
XTL	34.12	15.37	Nextel Communications	31.5			XCIT	125.00	18.00	Excite, Inc.	104
CDM	66.12 80.43	26.50 37.75	Panamsat Qualcomm (H)	36.6 77.2			SEEK	100.00	14 87	Infoseek	79
BC SB	59.93	35.00	S8C Communications	52.8			LCOS	145.37	19 87	Lycos, Inc.	101
DN	89.93	\$4.43	Sprint Corp. (H)	88.5	0 1.50	1.7	NSCP	84 63	15.50	Netscape Communications (H)	
D\$	54.25	30.62	Telephone and Data Systems	\$3.6	3 2.25	4.4	DMKT	29.12 31.7S	4.25 10.00	Dpen Market, Inc. Open Text Corp.	11. 22.
SW	68.00	46.81	US West	\$4.7			PSIX	42.93	8 37	PSINet Inc. (H)	40
IA /CII	90.00	47.87 10.2S	Viacom (H) Winstar Communications Inc	. 89.3 . 33.8			QDEK	3.00	0.28	Quarlerdeck Corp.	0.
VCOM	86.68	37.31	MCI Worldcom Inc. (H)	85.6			SDTI	42 75	5.43	Security Oynamics	16
			7	- 55.6			SPYG	32.25	7 81	Spyglass Inc.	9.
SERI	VICES	OFF	-2.1%				YHD0	222 S0	20.31	Yahoo Inc.	174.
CXM	31.25	16.50	Acxiom Corp	26.S			STO	RAGE	& PEI	RIPHERALS OFF -3.	1%
MSY	S1.75 40.25	22.37 19.2S	Attillated Computer Servs American Mgt. Systems	40.5 33.3			ADPT	26.75	7.87	Adaptec Inc.	20.
UD	42.62	30.81	Automatic Dela Processing	38.8			APCC	55 50	25 81	American Power Conversion	29
SYS	57.94	34.06	Brsys Group, Inc. (H)	S7.6			CANNY		17.00	Canon Inc. (H)	25.
ATP	58.37	13.37	Cambridge Technology Ptnrs	22.2	5 -2.25	9.2	DBD	S0 81 88.93	19.12 60.00	Diebold Inc. Eastman Kodak Co.	23 66.
EN	40.50	23.62	Ceridien	35.6			EMC	118.37	34.25	EMC (H)	112.
BR DD	40.87	13.31	Ciber Inc.	18.7			1DM	10 18	2 93	lomega	S.
HRZ	23.25 \$2.7\$	10.75 11.80	Computer Horizons Corp. (L)	13.S 11.5			LXK	114.18	42.75	Lexmark International Group	87
C	74.87	46.25	Computer Sciences	66.7			QNTM	29.93	10.81	Quantum Secreta Technology	20
ST	70.56	34.00	Dst Systems Inc.	\$3.3	0.69	1.3	SEG STK	44 2S 51.12	16.12 20 12	Seagate Technology Storage Technology	29
08	54.00	30.43	Electronic Oata Systems	47.8			TEK	48 18	13.68	Tektronix	17
DC ISV	40.93 54.43	19.68 36.7S	First Oata Group (H) Fiserv	40.4 S1.9			XRX	63.00	39.00	Xerox	_ 51.
.07	47.70	00.10		31.9	0.44	1.1					

ACXM	31.25	16.50	Acxiom Corp	26.S0	-0.06	-0.2
ACS	S1.75	22.37	Attillated Computer Servs	40.50	-6.7S	-14.3
AMSY	40.25	19.25	American Mgt. Systems	33.38	-2.56	-7.1
AUD	42.62	30.81	Automatic Dela Processing	38.81	-0.S0	-1.3
8SYS	57.94	34.06	8rsys Group, Inc. (H)	\$7.63	1.50	2.7
CATP	58.37	13.37	Cambridge Technology Ptnrs	22.25	-2.25	-9.2
CEN	40.50	23.62	Ceridien	35.69	0.00	0.0
CBR	40.87	13.31	Ciber Inc.	18.75	6.94	-27.0
CDD	23.25	10.75	Comdisco	13,56	2.06	17.9
CHRZ	\$2.78	11.50	Computer Horizons Corp. (L)	11.50	-1.56	-12.0
CSC	74.87	46.25	Computer Sciences	66.75	0.44	0.7
DST	70.56	34.00	Dst Systems Inc.	\$3.31	0.69	1.3
EOS	54.00	30.43	Electronic Oata Systems	47.88	-0.19	-0 4
FDC	40.93	19.68	First Oata Group (H)	40.44	1.81	4.7
FISV	54.43	36.7S	Fisery	S1.94	3.44	7.1
IT	41.75	17.31	Gartner Group	21.13	·1.S0	-6.6
KEA	60.93	24 7S	Keane	26.81	2.56	-8.7
NDC	SS.2S	26.18	National Data	40 75	-S.38	-17 7
PAYX	SS.06	33.12	Paychex, Inc.	48.75	3.06	7.2
REGI	30.50	5.00	Renaissance Worldwide (L)	\$.03	-0.78	-13.4
REY	24.00	12.62	Reynolds & Reynolds	18.00	0.19	-10
SFE	49.00	17.12	Sategard Scientifics	47.75	10.81	29.3
SAPE	82.87	24.28	Sepient Corp.	63 81	-0.19	-0.3
SMS	86.S0	40.06	Shared Medical Systems	54.63	4 88	9.8
SOS	41.87	21.68	Sungard Oata Systems	38 81	-2.13	-52
SYNT	32.62	8.68	Syntel Inc.	18.75	-2.13	-11 9
TECD	S3.12	18.50	Tech Data (L)	16.69	-0 38	-2.2
TSS	26.25	14.43	Total System Services, Inc	19.94	0.69	-33
TSAI	51.00	27.06	Trensaction Sys. Architects	37.63	-1.75	-44

MEI	MURI	UPU	J. 7 70			
COMS	S1.12	22.93	3Com Corp.	28.94	1.00	40
ADCT	44.06	15.75	ADC Telecommunications Inc.	41.00	-0.13	-03
ANTC	28.50	11.50	Antec	26 75	1.69	6.7
ASN0	93.37	31.06	Ascend Communications Inc.	78.50	-0.19	0 2
8NYN	19.37	2.12	Banyan Systems Inc.	9.81	-0 19	-1.9
CS	15.58	6.62	Cebletron Systems	8.13	0.13	1.6
CNEBF	20.00	5.75	Call-Net Enterprises	8.13	0 31	4.0
CSCO	117.50	40.12	Cisco Systems Inc	103.19	2 56	2.5
ECILF	45.00	19.75	ECI Telecom	37.06	-3 94	-98
FDRE	28.00	9 25	Fore Systems Inc.	13 94	-0.81	-55
HRS	55.31	27.56	Harris Corp	30.25	0 69	23
GMH	57.87	30.37	Hughes Electronics/GM	47.81	0.78	1.6
ERICY	34 00	15.00	LM Ericsson	25 31	0.13	-0.5
LU	120.00	S3 43	Lucent Technologies	103.31	-0.94	0.9
MADGE	7.75	178	Madge Networks	3.47	0.09	2.8
NCDI	11 87	4 37	Network Computing Dev	4 88	-044	-82
NWK	20.82	8.00	Network Equipment Tech.	8 06	-0 31	37
NN	39 87	15.43	Newbridge Networks	29 94	4.06	1S 7
NOK.A	155 37	47 81	Nokie Corp	145.44	-1 31	.0.9

EXCH	WEEK	RANGE	M	ARCH 12 2 PM	CHANGE	CI
NT	69 25	26 81	Northern Telecom Ltd	59 19	2 38	
PAIR	24 37	6.00	Pairgain Technologies Inc	9 63	0.97	
PCTL	11.93	4 75	Picturetel	8.19	16.0	
SFA	35.00	11 75	Scientific Atlanta	26 94	1 25	
TLAB	93 12	31.37	Tellabs Inc	89.38	6 13	
USW	66.00	46.81	US West	54 75	-0.19	
VRLK	11.18	2.87	Verrlink	3.25	-0.13	
WSTL	14 75	2.75	Westell Technology Inc.	4 63	-0 47	
XYLN	36.50	9.62	Xylan (H)	36 44	0 28	
SEM	ICON	DUCTO	RS, CHIPS & EQUIP	MENT	OFF -	0.
ADPT	26.75	7.87	Adaptec	20.75	0 44	
AMO	33 00	9.31	Advanced Micro Devices	16 44		
ALTR	71.87	28.25	Altera	58.28		
AD1	39 62	12.00	Analog Devices	28.38		
AMAT	71.62	21.56		61 00		
ASML	49.06	12 93	ASM Lithography Holding	41.38		
HRS	SS.31	27.56	Harris Corp	30 25		
INTC	143.68	65.65	Intel Corp.	117 97	S.19	
KLAC	65.00	20.75	Kla Instruments	S4 81	0.50	
LLTC	\$3.50	19 S6	Linear Technology			
LSI	29.93	10.50	LSI Logic	25.9		
MXIM	56.62	22.31	Maxim Integrated Products	45.25		
MU	80.56	20.06	Micron Technology	SO 69		
MOT	74 43	38.37	Motorola	67 88		
NSM	24.75	7.43	National Semiconductor	10 08		
STM	107.62	35.87	SGS-Thomson Microelectronic			
SLR	50.88	17.68	Solectron Corp. (H)	49.94		
TER	66.50	15.00	Teradyne	52.38		
TXN	107.87	45.37	Texas Instruments (H)	98.00		
UNPH	100.50	31.25	Uniphase (H)	100.00		
VTSS	52.93	17.12	Vitesse Semiconductor Corp	46.31		
XLNX	43.87	14.87	Xilinx (L)	36.94		
CON	IPUTE	R SYS	STEMS UP 1.8%			
AAPL	47.31	22.93	Apple Computer Inc.	33.00	0.13	
ASPX	11.81	1.62	Auspex Systems (H)	11.81		- 1
CPQ	51.25	22.93	Compag	30.50		
DGN	21.81	7.00	Data General	11.13		
DELL	\$8.00	15.25	Dell Computer Corp. (L)	41.75		
GTW	84.S0	36 12	Gateway 2000 Inc	68.50		
HWP	83.87	47.06	Hewlett-Packard Co.	68.75		
HIT	77.00	40.18	Hitachi Ltd	71 88		
ĪBM	199.25	96.68	IBM	178.81		-
MUEI	24 78	9.68	Micron	12.08		
MDT	74.43	38.37	Motorola	67.88		
NATI	36.S0	17.S0	National Instruments Corp.	29.38		
NCR	55.78	23.50	NCR	44 69		
NIPNY	\$7.75	31.00	NEC	55.00		
PRCM	13.25	3.50	Procom Tech Inc.	S.S0		
SONT	20.87	5.68		9.63		
SGI	20.87	7.37	Sequent Computer Systems Silicon Grafix	14.69		-
	97.25	60.25	Sony (H)	96.88		
SME		38.18				
SNE		30.10	Sun Microsystems			
SUNW	115.75	2.00	Toyac Misso			
SUNW TEXM	S.93	2.00	Texas Micro	4.44		
SUNW		2.00 0.37 17.25	Tricord Systems Unisys	3.06 30.13	0.38	

AMZN	199.12	12 87	Amazon.com	130.88	9 56	7.9
ADL	95.81	15.12	America Diline (H)	95.28	8.56	9 9
MHTA	131.00	23.50	@home Corp	113.38	-4.13	-3.5
CKFR	42.00	5.75	Checkfree	39 63	6.13	18.3
CYCH	27.75	5 87	Cybercash, Inc.	11.75	.0.56	-4 6
EDFY	20.87	4.62	Edify Corp.	6.00	0.00	0.0
EGRP	66.43	5.00	ETrade Group Inc.	52.28	6.75	14 8
XCIT	125.00	18.00	Excite, Inc.	104.81	-5 44	-49
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# **Antitrust Suits Could Have Some Impact**

Even though there's pessimism about how much impact antitrust actions will have on the Wintel alliance, some observers have seen steady

"If the government wins in the Microsoft case, at least the Department of Justice is going to feel much more confident in going out and looking at the practices of other companies," said Evangelina Almirantearena, an attorney at the Washington-based law firm Howrey & Simon.

Companies may be more afraid of tangling with the Justice Department, too. But a newly elected administration in 2001 may not be as aggressive on antitrust as the Clinton administration has been, she added.

Several analysts said it may be too early to judge the success of the government in affecting the marketplace controlled by the Wintel duopoly of Microsoft and Intel, although government attorneys do have as one goal encouraging competition that results in measurable benefits to end users.

"The one thing the government has been very effective at is bringing out all this information about Microsoft in a light that has been extremely unfavorable to Microsoft," Almirantearena said.

Users widely distrust Microsoft especially, according to a poll that Giga Information Group Inc. in Cambridge, Mass., published in December. The poll found that 59% of 123 large companies said they trust Microsoft the least from a list of 10 companies. Asked if they would move away from Windows if given the opportunity, 58% said they would.

The actions against Microsoft and Intel should result in efforts by both companies to provide better customer service, analysts said, pointing to Microsoft's creation of a Customer Satisfaction organization in January [CW, March 1].

- Matt Hamblen and David Orenstein Continued from page 1

# Whither Wintel: Strong as Ever?

"I don't see any changes for Wintel's position. And even though Microsoft keeps shooting itself in the foot in the trial, it won't matter," said Ed Mackereth, a distributed systems integrator at American Trust Bank in Cumberland, Md., which has 3,000 Windows desktops. "There's no way that the government can make Microsoft stop doing the things

Added analyst Chris Goodhue at Gartner Group Inc. in Stamford, Conn., "Wintel has a huge installed base, and if there's any demise coming, it's a long time coming."

Meanwhile, it's up to users to try and gain some advantage from the years of government scrutiny, according to William Kemp, information technology director at Arizona Mail Order Inc. in Tucson, Ariz. "We're becoming more reliant on [Wintel] software. When they make decisions, we have to take a position. It is in our best interest at this point" to apply pressure, Kemp said.

#### Independent Stand

Monty Sharma, chief technology officer at Maritime Telegraph and Telephone Ltd. in Halifax, Nova Scotia, said he sees his corporate IT peers standing up to Microsoft and being willing to move to a different platform if Microsoft doesn't give them what they want. "Look at Linux," he said. "They're not such an unassailable threat that if they do something stupid, we won't move."

"All of us want just enough stability so we can sleep at night. But Microsoft is too big and has too much money to ever be out of our faces, so why not shake them up a little?" Sharma said.

At best, the government may have already been partially effective in that Microsoft has backed off from some of its exclusionary practices, said Constance Bagley, a senior lecturer in law and management at Stanford University School | to this article.

of Business. If accepted, last week's settlement between Intel and the Federal Trade Commission on the eve of that trial would force Intel to stop trying to choke off partners that threaten to sue, she added.

Another plus, according to Esther Dyson, chairman of EDventure Holdings Inc. in New York, is that PC makers and other vendors have been able to demand more flexibility from Microsoft and Intel during the antitrust investigations. "This changes the balance of power," Dyson said.

Even so, many observers said the government's actions against the two companies will have little public impact, particularly in terms of trickling down to users. That may be because "the really difficult issue is finding some kind of remedy even if the government has a slam dunk," said Evangelina Almirantearena, an attorney at the Washington-based law firm Howrey & Simon and a Justice Department antitrust attorney from 1988 to 1996.

In Intel's case, the FTC's lack of action will maintain the status quo because the government has been investigating Intel since 1991 and has never made a ruling against the company. Yet the FTC last week said an investigation continues apart from the settlement.

Users said they worry that the antitrust actions won't bring down prices or boost competition noticeably. Some blamed a dearth of meaningful competition and the inability of either the government or the free market to change that.

"I can't really see [Wintel] being displaced for a long time," said Joseph Preski, CIO at Hyundai Precision America Inc. in San Diego. "And the competitors are not showing me much, either."

Computerworld writers Stacy Collett, Stewart Deck, Sharon Gaudin, Thomas Hoffman, Kim S. Nash, David Orenstein and Patrick Thibodeau contributed

# FTC's Antitrust Dance with Intel

1991-1993: Federal Trade Commission investigates several patent infringement claims against Intel, then closes a twoyear monopoly investigation without taking action. During this period, AMD and Cyrix sue Intel over antitrust claims. AMD loses its lawsuit in June 1992.

MAY 1997: Digital claims Intel infringed on its Alpha chip

SEPTEMBER 1997: FTC opens a broad investigation into Intel's business practices.

OCTOBER 1997: Digital and Intel settle.

**NOVEMBER 1997:** Computer workstation maker Intergraph Corp. in Huntsville, Ala., sues Intel over microprocessor patents. An antitrust violation is added to the lawsuit at the last minute. Intel countersues Intergraph.

FEBRUARY 1998: Intel and National Semiconductor settle the Cyrix lawsuit; Cyrix is now part of National Semiconductor.

APRIL 1998: Preliminary ruling by U.S. District Judge Edwin Nelson says Intel probably abused its monopoly power by withholding information from Intergraph.

JUNE 1998: FTC files suit against Intel for allegedly monopolizing the microprocessor market by withholding the right to use its intellectual property from Digital, Compaq (which now owns Digital) and Intergraph. The companies assert that Intel infringed on their patents.

MARCH 1999: FTC and Intel lawyers announce a proposed settlement one day before trial is set to begin on March 9.

# The Settlement

What happened last week in the Intel case? Less than 48 hours before the trial was to begin, lawyers for the FTC and Intel reached a proposed agreement in the antitrust case against the chip maker last Monday.

When will the FTC decide? There could be a decision in two weeks.

Why was the FTC suing? The FTC suit alleged that Intel had monopolized the market for microprocessors by withholding the right to use its intellectual property from three companies - Digital Equipment Corp., Compaq Computer Corp. and Intergraph Corp.

What does the settlement cover? Neither side will discuss the terms of the settlement, but published reports and analysts have speculated that it will likely be a limited settlement in which Intel agrees to stop withholding technical information from companies that have

brought lawsuits against it. It's unlikely to resolve the bigger issue of intellectual property rights.

Is the FTC investigation over? No. Both Intel and the FTC said an investigation continues on matters beyond the settlement. According to observers, that includes concerns about whether Intel could be using its market position with microprocessors to enter other markets and whether it hurts other makers of semiconductors with its control over certain technical standards. Intel officials, who have been down this road before, showed little concern.

Is Intergraph still suing Intel?

What does this mean for users and OEMs? Analysts predict it will mean little for users but say it should ensure that OEMs have access to technical information even if they had filed lawsuits against Intel.

- Stacy Collett and Matt Hamblen

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# MILLENNIUM MADNESS

Steps for managing year 2000 anxiety from Kevin Grold, president of the 1-800-THERAPIST Network (www.1-800-therapist.com)

- Separate real concerns about computer operation problems from catastrophic thinking. Decide if your fears are reality based. Challenge and question dire predictions about Y2K. Get the facts.
- Place your worries into two categories: those you have control over and those you have no control over. Practice letting go of the latter.
- If your computer really won't work in the year 2000, take active steps to fix the problem. Action will ease your anxiety.
- Remind yourself that you have previously coped with change. Write down specific instances.
- Block negative thinking and refocus on something positive.



**INSIDE LINES** 

#### **PLEASE STAND BY**

Bill Gates and video aren't mixing well these days. He didn't look good on tape in Microsoft's antitrust trial. And a video problem interrupted his keynote at a Microsoft conference in Japan last week. After standing in darkness waiting in vain for the sound to start on a video, an exasperated Gates walked off the stage. Forgetting his microphone was still on, he unwittingly

announced for all to hear: "We can just come back. Skip it. I mean, Jesus!"

#### **SIGN OF THE TIMES**

Bad news for **Netscape**: Pharmaceutical giant **Eli Lilly** is scrapping its use of Navigator in favor of Microsoft's Internet Explorer. Worse news: "It has nothing to do with the capabilities of the two browsers," according to Lilly information officer Edward Tunstall. Lilly already has a purchasing

has discovered that Michelangelo's "David" is 17 feet tall – three feet taller

than history books say

agreement in place with Microsoft, Tunstall said last week, and "my goal is to decrease the number of vendors we deal with."

#### A PALMPILOT IT AIN'T

This week at Germany's huge CeBIT trade show, DaimlerChrysler will showcase a Mercedes-Benz V Class Multi-Purpose Vehicle equipped with a Business Console Option. The option consists of an IBM ThinkPad replete with speechrecognition software, printer, telephone, fax capability, a wireless link to the Internet - and a desk to put it on. Now that's mobile computing.

#### **OVERHEARD**

Former U.S. Secretary of Labor Robert Reich, exercising sarcasm at a BusinessWeek conference for CFOs in Scottsdale, Ariz.: "I'm going to stay in bed on Jan. 1 and Jan. 3, 2000. No airplanes. No elevators. No toasters."... Oracle Vice President Jnan Dash, expressing amazement at how Boeing builds its complex 777 aircraft: "How do they do that? If they do it like we do software, we can't fly."

#### **RUMOR MILL**

SAP has apparently spiked its idea of charging consulting firms up to \$4 million per year to be certified to work on R/3 projects.... SCO should announce a data center edition of its UnixWare operating system at CeBIT this week in Germany, along with Intel, Compaq, ICL, Unisys and IBM.

#### AND YOU THOUGHT YOU HAD UPGRADE PROBLEMS

Everyone was smiling last Friday in Independence, Mo., as **NATO** added three new members: Poland, Hungary and the Czech Republic. But like a thorny corporate merger, no one will smile at the cost of making the former Soviet bloc countries' IT systems work with those of NATO. Case in point: Poland's estimate to get its communications systems to work with NATO's is about \$7 billion just in the next year - and that's without Y2K fixes. Ouch! Communicate your news tips and tidbits to news editor Patricia Keefe by e-mail at patricia keefe@ computerworld.com or call (508) 820-8183.

# Michelangelo Project Creates Virtual Sculpture

THROUGH ADVANCES in computer graphics, art lovers could soon examine highly realistic, threedimensional models of Michelangelo's statues at local art museums or on their PCs. Stanford University's Digital Michelangelo Project is creating computerized copies of the sculptures, making it possible to zoom in on tiny details or to view the statues from different angles — such as the top of David's head, which few people have seen. The computer models could even be used to help restore damaged areas, create accurate replicas or animate the classic figures. The first step, already under way, is scanning the sculptures in Italy. STANFORD's digital scanning team already

# The 5th Wave





How does Sony Electronics put so many great products in the hands of consumers? They use WebFOCUS to put up-to-the-minute inventory data in the hands of their managers.

WebFOCUS is a powerful Web reporting and analysis system that can access any database and platform, so it was easy to consolidate data. And it's so productive developers were able to put new reports on their intranet in minutes.

Gary Fischer, Data Warehousing
Manager at Sony Electronics says, "It
gives everyone from senior executives
to operational staff the answers they
need when they need them."

Now that's remote control.

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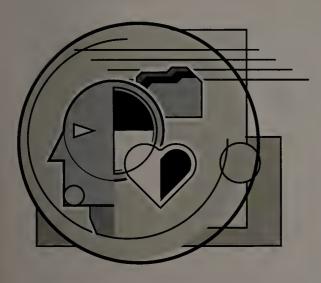
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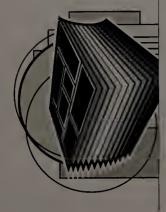
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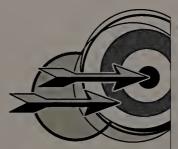
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# **Quicker'n Greased Lightning**

Want to see one of the world's fastest advertising closes? Want to see it again? Yeah, old joke, but that doesn't take away from the fact that Computerworld's ad close is now Monday at 12 Noon (EST)—three days shorter than the published close date of any weekly enterprise publication and a mere five working days prior to the issue's delivery day of the following Monday. Premium positioning still works on a 10-day close, but the 5-day close gives you a chance to break campaigns more quickly and react to fast-breaking technology news.

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ISSUE DATE	AD CLOSE	EDITORIAL FEATURES
MARCH 29	MARCH 22	QuickStudy How data mining can help you spot patterns and make sense of a huge batch of data. Editorial contact: Stefanie McCann.
5	MARCH 29	The Top 100 IT Products of the 20th Century Users and industry experts have their say in identifying the information-related technologies that have had the greatest impact on our lives and our businesses. Editorial contact: James Connolly.  Quarterly Hiring Survey An update on where the jobs are. Editorial contact: David Weldon.  QuickStudy How unsolicited e-mail has made spam a four-letter word.  Editorial contact: Stefanie McCann.
APRIL 12	APRIL 5	The Future of the IT Organization A snapshot of how the IT organization will shape up in the coming years as it adapts to new corporate structures and emerging technologies. Editorial contacts: James Connolly (technology issues) and Allan Alter (corporate issues).  QuickStudy What you need to know about the application servers that sit behind your browser and keep the business running. Editorial contact: Stefanie McCann.
APRIL 19	APRIL 12	The New Desktop A look at the evolution and innovation that has gone into desktop computers, and how the standard PC stacks up against alternatives like thin clients, managed PCs and notebooks. Editorial contact: James Connolly.  Sixth Annual IT Job Satisfaction Survey IT staffers rate their employers, their career opportunities, their work environment and their compensation. Editorial contact: David Weldon.  QuickStudy How Geographical Information Systems (GIS) can help you map out business opportunities. Editorial contact: Stefanie McCann.
26	APRIL 19	QuickStudy How digital wrappers help to deliver compressed data.  Editorial contact: Stefanie McCann.
3	26	Java: Is Java Ready for Prime Time? A look at the state of development tools and Java applications for the corporate world. Editorial contact: James Connolly.  QuickStudy How applets do their job, executing simple tasks as part of a bigger application. Editorial contact: Stefanie McCann.
10 10	MAY 3	The Internet @ 25 A retrospective on the impact of the Internet on the business world. Editorial contact: Steve Ulfelder. (N+I, Las Vegas)  QuickStudy The role transaction servers play in electronic commerce. Editorial contact: Stefanie McCann.
17 17	10 <sup>MAY</sup>	Data Mining A look at some of the tools that can help users find just the right information in the corporate database. Editorial contact: James Connolly.  QuickStudy Why the Component Object Model (COM) is one of the key architectures that allow objects to interoperate in a network. Editorial contact: Stefanie McCann.
<b>24</b>	<b>17</b>	Annual Consultants Salary Survey A look at how IT consultant compensation breaks down by technology specialty, experience and region. Editorial contact: David Weldon.  QuickStudy How policy networking helps to control bandwidth usage and user access. Editorial contact: Stefanie McCann.
<b>31</b>	<b>24</b>	Disaster Recovery Corporate managers who have endured disasters analyze what went right, and what went wrong with their disaster recovery services. Editorial contact: James Connolly.  QuickStudy What you need to know about the role of Secure Sockets Layer in electronic transactions. Editorial contact: Stefanie McCann.
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